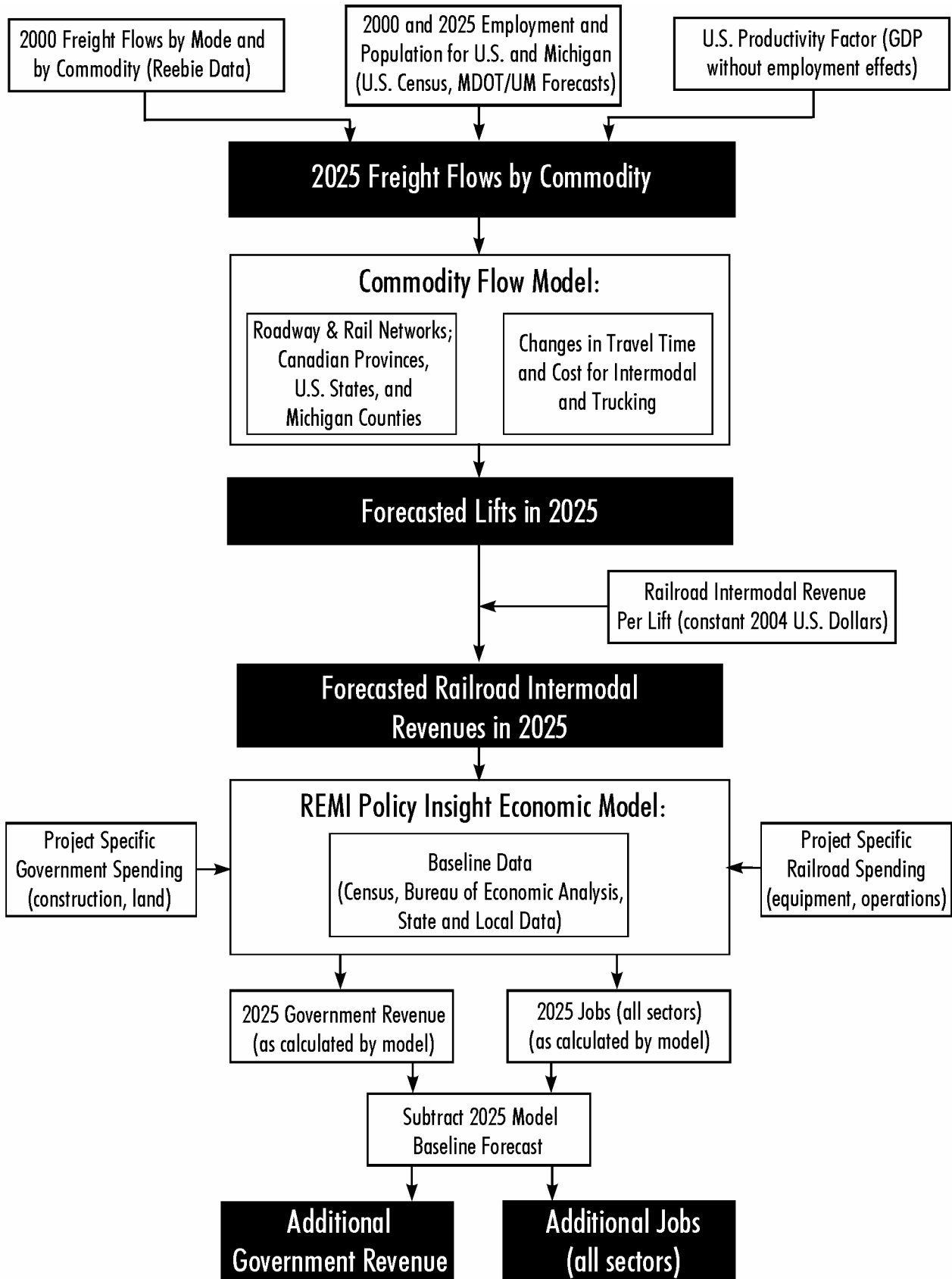




**Figure 4-26b**  
**Integration of Commodity Flow and REMI Modeling Processes**



SOURCE: The Corradino Group of Michigan, Inc.

- Property taxes lost due to public acquisition of property;
- Equipment costs;
- Operations and maintenance costs; and,
- Additional railroad terminal revenues related to increased intermodal business.

The sources of the input data are summarized as follows:

- The total investments to implement, equip, operate and maintain each Action Alternative range from \$326.4 million for Alternative 2 to \$697.7 million for Alternative 3 (Table 4-17). These costs were developed in consultation with railroad operators and project engineers.
- Revenue generated by intermodal business was calculated based on the number of additional lifts forecast in each alternative. The revenue reflects the competitiveness of the alternatives, i.e., Alternatives 3 and 4 have a greater geographical reach than Alternative 2 and that improved position is reflected in the revenue.
- Businesses subjected to relocation were interviewed, to the extent possible, and available land within the various study zones was inventoried to establish the likely destination of relocated businesses and their associated jobs. The interviews established that no businesses would cease operations or relocate outside the Southeast Michigan region, and that most businesses would relocate as close as possible to their current location. Therefore, while some jobs would be relocated, no jobs would be lost to the region in any alternative.
- An inventory indicated that sufficient for-sale and available rental housing stock existed in the zone in which residential property would be acquired, ensuring that displaced households had ample opportunity to relocate within the area.
- Property tax records were used to determine the amount of property tax revenue that would be lost due to public acquisition of property.

**Table 4-17**  
**Construction Costs by Alternative<sup>a</sup>**  
**(millions of 2004 dollars)**

<b>Category</b>	<b>Alt. 1 Total</b>	<b>Alt. 2 Total</b>	<b>Alt. 3 Total</b>	<b>Alt. 4 Total</b>
Construction Costs	\$10.5	\$169.7	\$457.7	\$436.0
Land Acquisition/ Relocation/Remediation Costs	\$0.0	\$97.5	\$125.0	\$114.9
Equipment Investment	\$0.0	\$50.0	\$100.0	\$100.0
Operations & Maintenance Costs	\$0.0	\$9.2	\$15.0	\$17.1
<b>All Costs</b>	<b>\$10.5</b>	<b>\$326.4</b>	<b>\$697.7</b>	<b>\$668.0</b>

<sup>a</sup>Represents railroad or government contribution to total cost at application of REMI Model at June 1, 2004.

Source: The Corradino Group of Michigan, Inc. and Analytic Planning Services

## 4.5.2 Results

### Jobs

Table 4-18 compares the number of jobs relocated from each local terminal area with the number of net jobs resulting from each alternative in the year 2025. “Net Jobs Gained” reflects the actual number of additional jobs gained, while accounting for the jobs removed as a result of business relocations. While some jobs are relocated from their original local terminal area to a different area, no jobs are lost to the region as a result of relocation.

**Table 4-18**  
**Jobs Relocated<sup>a</sup> and Net Jobs Gained<sup>b</sup>**

Analysis Area	ALT 1 – 2025		ALT 2 – 2025		ALT 3 – 2025		ALT 4 - 2025	
	Jobs Relocated from Area <sup>a</sup>	Net Jobs Gained <sup>b</sup>	Jobs Relocated from Area <sup>a</sup>	Net Jobs Gained <sup>b</sup>	Jobs Relocated from Area <sup>a</sup>	Net Jobs Gained <sup>b</sup>	Jobs Relocated from Area <sup>a</sup>	Net Jobs Gained <sup>b</sup>
Liv Jct/CP Exp	0	194	0	786	286	2,245	275	1,956
CP/Oak	0	130	596	187	0	513	0	496
CN/Moterm	0	88	0	390	0	495	0	695
Detroit Plus	0	459	411	1,764	196	3,780	190	3,658
Wayne Plus	0	564	224	2,521	104	4,844	100	4,705
Michigan	0	1,029	0	4,950	0	9,050	0	8,819

<sup>a</sup>Includes jobs relocated to outside their original local terminal area.

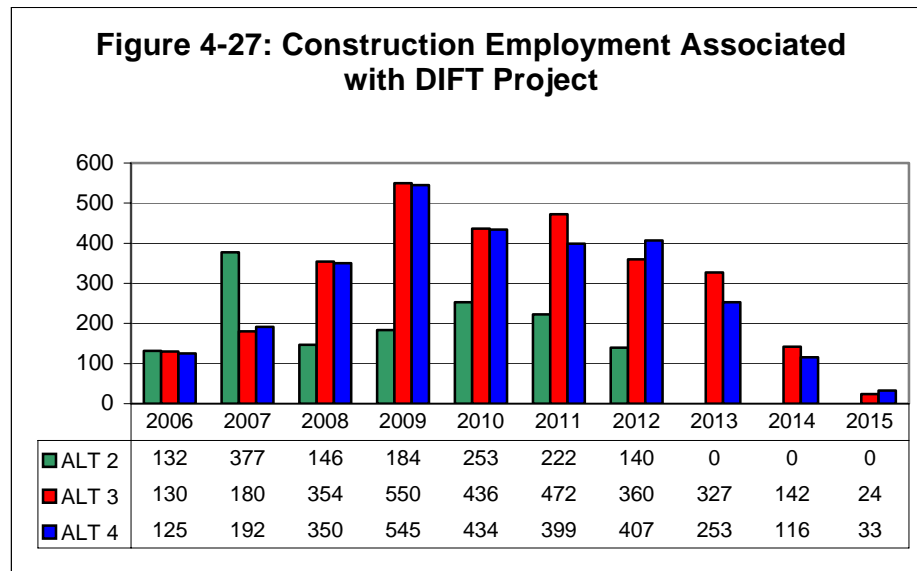
<sup>b</sup>Net jobs gained in study area, deducting for jobs relocated to outside their original local terminal area.

Source: The Corradino Group of Michigan, Inc. and Analytic Planning Services

The jobs presented on Table 4-18 include direct, indirect, and induced jobs. Direct jobs are those directly associated with the intermodal facility. Jobs such as suppliers, service providers, and support services to the intermodal business are considered “indirect” jobs. Induced jobs are those created as a result of the presence of direct and indirect wage earners requiring services in the local economy. Induced jobs include restaurant workers, teachers, and retail clerks needed to serve the direct and indirect jobs.

Table 4-18 reveals job creation for each alternative. Alternative 1: No Action is, in 2025, associated with over 1,000 additional jobs in the local and regional economies compared to today’s conditions. Alternative 2: Improve/Expand Existing Terminals is associated with about 5,000 new jobs, or about 4,000 more than forecast for the No Action Alternative. Alternatives 3 and 4, which in 2025 are associated with the largest increases in intermodal activity and investment, stimulate the greatest amount of total job growth, creating approximately 9,000 new jobs, which is about 8,000 more jobs than under the No Action Alternative. For the City of Detroit, the net jobs gain ranges from about 1,760 to almost 4,000 depending on Action Alternative. New jobs occur in all sectors of the economy and represent a diverse range of skill and wage levels. The average wage for all new jobs created is forecast to be about \$40,000 per year.

In addition to permanent jobs, employment opportunities will also be created during the construction period of each alternative (Figure 4-27). Overall, Alternatives 3 and 4 would create more construction jobs over a longer period than Alternative 2 because of the increased investment in the former alternatives. No major construction, beyond maintenance, is expected under Alternative 1.



Source: The Corradino Group of Michigan, Inc. and Analytic Planning Services

## Government Revenues

While state and local government revenues are predominantly comprised of taxes, they also include all fees, charges, and other sources of income that all government entities at the local and state levels collect. The Policy Insight™ model is calibrated to reflect the most recent government revenue data at the state and local levels and creates a control forecast that can be compared to the effects of each DIFT alternative.

Alternatives 2 through 4 involve at least some acquisition that removes properties from the tax rolls as the acquired property would be owned by the state (MDOT), which does not pay taxes. Table 4-19 compares the estimated loss in property taxes to the additional local revenue created by each alternative. The property taxes lost are not inflated. Therefore, they are expressed in Net Present Value without having to discount them. The revenue gained was affected by inflation and is presented in Net Present Value to reflect its cumulative value in today's dollars like the property taxes lost. While the forecast of revenues by terminal area cannot reflect how or where overall government revenues are spent, the table demonstrates that in each alternative, the "Government Revenue Gain," produces more new local revenues than the property tax revenue that is lost.

**Table 4-19**  
**Terminal Area Property Tax Reduction**  
**and Local Revenue Gained <sup>a</sup>**

	ALT 1		ALT 2		ALT 3		ALT 4	
	Property Tax Revenue Reduction	Net Gov't. Revenue Gain	Property Tax Revenue Reduction	Net Gov't. Revenue Gain	Property Tax Revenue Reduction	Net Gov't. Revenue Gain	Property Tax Revenue Reduction	Net Gov't. Revenue Gain
Detroit Plus Local Revenues <sup>b</sup>	0.00	27.09	-17.33	49.86	-14.37	172.24	-13.80	177.36
All Revenues, State and Local <sup>c</sup>	N/A	154.88	N/A	667.80	N/A	1,065.62	N/A	1,108.04

<sup>a</sup>Property tax figures are cumulative 2006 (the first year of expected implementation) to 2025, expressed in 2004 U.S. dollars (USD), in millions. Government Revenue Gain presented in Net Present Value, discounted at 2%, expressed as 2004 USD in millions.

<sup>b</sup>Local Revenues represent cumulative loss and gain for all local, public, and revenue-generating entities within the Detroit Plus zone, including property taxes collected by the City of Detroit, Wayne County, and all other taxing authorities. Because they were never inflated they weren't discounted so they are already expressed in Net Present Value.

<sup>c</sup>All additional cumulative 2004-2005 revenues collected in the State of Michigan by any state or local entity.

Source: The Corradino Group of Michigan, Inc. and Analytic Planning Services

## 4.6 Land Use and Zoning

### 4.6.1 Livernois-Junction Yard

Land use in the Livernois-Junction Yard area is predominately industrial and commercial. The area has large amounts of land dedicated to railroads, scrap yards, equipment storage, container storage, and truck terminals and offices. Ford's large River Rouge plant is to the west of the terminal. Residential land is to the east of the terminal and north of the industrial land that borders the terminal. A substantial amount of vacant land exists in the terminal area. The non-residential zoning in Detroit around the Livernois terminal is predominantly intensive industrial and special industrial. The zoning in the area also includes single-family residential, two-family residential, medium density multi-family residential, low density multi-family residential, general business, local business, restricted industrial, and general industrial. The zoning in Dearborn around the Livernois-Junction Yard is intensive industrial. The Detroit Master Plan of Policies for the Southwest Sector of the City states:

“Southwest Detroit has two outstanding economic characteristics: an exceptional concentration of very heavy industry, and a unique convergence of freight transportation modes. Weaknesses of the Sector relate to economic obsolescence in both the industrial and commercial plant. Strengths of the area include the Detroit River as a unique attraction, the fixed nature of the transport infrastructure, the availability of many sound industrial buildings, and the shopping habits of many local residents favoring neighborhood stores.

Detroit's major concentration of ports, rail facilities, truck terminals, pipelines, international crossings and associated or support facilities and organizations occurs in the Southwest Sector. This remains unchanged despite the serious and continuing erosion of the Sector's manufacturing base. Only to a limited extent can changing technology, changing corporate ownership patterns, or other evolutionary factors disperse southwest Detroit's highly significant concentration of freight facilities. In fact, prevailing economic forces actually favor continued concentration.

The Southwest Sector, therefore, will remain an area of primary economic importance, and industrial activities, within the limits of sound planning and environmental protection.”

The Dearborn Master Plan states the following:

“A multi-modal freight terminal is planned to serve the Con Rail Railroad lines directly east of the City of Dearborn. This facility would be so close to Dearborn that it could eventually serve industrial development and shipping needs in both Detroit and Dearborn. A multi-modal facility would provide automatic transfers between port, rail, truck and air transit modes. Without such a multi-mode facility, a company would have to make separate arrangements when shipping goods over water, air, or land. With a multi-modal terminal, a shipment can be automatically transferred from one mode of transportation to another without the need to make additional separate arrangements. Such a facility is a strong economic development incentive and although the facility will be located in Detroit, it will be close to Dearborn and should also have a strong economic development advantage for Dearborn.”

#### **4.6.2 CP/Expressway Terminal**

Land use immediately around the Expressway terminal includes railroad facilities, the old MCRR passenger station, a hospital, industrial land, commercial land, and vacant land. Zoning immediately around the Expressway terminal includes intensive industrial, general industrial, restricted industrial, two-family residential, and general business.

#### **4.6.3 CP/Oak Terminal**

Land use around the CP/Oak terminal is predominately industrial. I-96 is located directly to the south of the terminal. Zoning immediately around the CP/Oak terminal includes intensive industrial, general industrial, restricted industrial, single-family residential, and two-family residential.

#### **4.6.4 CN/Moterm Terminal**

Land use immediately around the CN/Moterm terminal is predominately industrial to the east and north and single-family residential to the west. Eight Mile Road and the Michigan State Fairgrounds are to the south of the terminal. Zoning, in Detroit, immediately around the Moterm terminal includes general business, two-family residential, and intensive industrial. Zoning, in Ferndale, immediately around the Moterm terminal is predominantly general manufacturing and light manufacturing with some low density residential, single-family residential, vehicular parking, and business zoning. The Detroit Master Plan of Policies for the North Sector of the city states:

“The elements most greatly affecting the future of the North Sector are its industrial facilities, its neighborhood systems, and – directly tied to neighborhoods – its housing stock. The Sector’s greatest potential lies in the maximization of these three resources.

Industrial areas of the North Sector appear to have excellent potential for continued employment opportunities, for expansion of select areas, and for continued support of the economic base of the City, given the Sector's attributes of location.

Central to the future of the North Sector is its neighborhood systems. The North Sector has many healthy neighborhoods on which to expand; it has just as many neighborhoods with the potential to become just as healthy as any of the best neighborhoods of the Detroit metropolitan area.

The North Sector is a major trucking center, second in importance only to the Southwest Sector (among Detroit's 11 planning sectors). Rail transportation, however, is of less importance to the North Sector, for rail lines mainly serve through traffic. The Sector is not heavily industrialized; there are very few active rail sidings here, and no rail classification yards (areas used for switching and freight trains linking up) or terminals remaining active.

The construction of the planned Light Rail Transit (LRT) system along Woodward will have an important impact on the North Sector. The regional transportation plan calls for the development of a LRT system in the Woodward Corridor from downtown Detroit to the northern suburbs."

The terminal proper lies in Ferndale. Its Master Plan states:

"Ferndale's economic health depends on maintaining and expanding the existing industrial and business base. The recent East Michigan Environmental Action Council (EMEAC) project reported that 20 percent of the industrial firms were considering relocating outside the City. Reasons given for considering relocating were: to be closer to customers; to find land to expand; to access cheaper labor pools; to escape local business decline; and to move to a more receptive city. An ongoing mechanism needs to be established to obtain input from the business and industrial community to assist the City of Ferndale and the Chamber of Commerce officials to identify priority needs."

#### **Alternative 1: No Action**

The continued existence of the four rail terminals is contemplated by the Detroit Master Plan of Policies (Livernois-Junction Yard, CP/Expressway, CP/Oak and CN/Moterm terminals), the Dearborn Master Plan (Livernois-Junction Yard), and the Ferndale Master Plan (CN/Moterm).

#### **Alternative 2: Improve/Expand Existing Terminals**

Further development of the Livernois-Junction Yard is consistent with the Master Plan of Policies of the City of Detroit. It is also consistent with the Dearborn Master Plan.

Expansion of the CP/Expressway terminal is consistent with the Master Plan of Policies of the City of Detroit, as described for the Southwest Sector of the City.

Further development of the CP/Oak terminal is not specifically mentioned in the Master Plan of Policies of the City of Detroit.



Expansion of the CN/Moterm terminal into the Fairgrounds is consistent with previous use of the Fairgrounds property by Canadian National Railroad and the current and more extensive use by DaimlerChrysler (refer to Figure 6-6). It is noteworthy the Michigan courts ruled in 1994 that use of the Fairgrounds is not subject to local government zoning control which allows the Fairgrounds to use its land as it sees fit. Expansion of CN/Moterm is consistent with the Detroit Master Plan of Policies for the North Sector of the City and with the Ferndale Master Plan.

### **Alternative 3: Consolidate All Four Class I Railroads' Intermodal Activity at Livernois-Junction Yard Area**

This consolidation at the Livernois-Junction Yard is consistent with the Detroit Master Plan of Policies and the Dearborn Master Plan, as much of that development will take place on industrial property while rezoning would be required of about 12 acres, out of the 384-acre expansion area, which is now residential.

### **Alternative 4: The Composite Option**

Expanding the Livernois-Junction Yard is consistent with the Detroit Master Plan of Policies, as much of the development will take place on industrial property while rezoning would be required of about 10 acres, out of the 265-acre expansion area, which is now residential. Expansion of the CN/Moterm terminal is consistent with the Detroit Master Plan of Policies, the Ferndale Master Plan, and past practices at the Fairgrounds.

## **4.7 Farmland/Part 361 of Michigan Act 451 Lands/Forest Land**

There is no agriculture or forestry zoning associated with any terminal. So, an additional review under the Federal Farmland Protection Policy Act is not required, therefore, an A.D. 1006 form was not prepared and coordinated with the U.S. Department of Agriculture, Natural Resources Conservation Service. The Michigan Department of Agriculture stated, "Since the construction of the proposed Detroit Intermodal Freight Terminal Project is to be accomplished within a highly developed part of the state, no adverse impacts to agriculture are anticipated." (See letter dated September 18, 2002, Appendix A, Section 2). No Michigan Public Act 451, Part 361 (The Farmland and Open Space Preservation Act) parcels are within the project area.

## **4.8 Air Quality Analysis**

The DIFT air quality analysis was guided by an Air Quality Protocol (Appendix E) and included:

- A discussion of air quality conformity and the attainment status of the project area with respect to the National Ambient Air Quality Standards (NAAQS), notably carbon monoxide (CO), ozone, and PM<sub>2.5</sub> (particulate matter of 2.5 microns or smaller).
- A discussion of pollution trends, and of U.S. EPA measures to improve air quality.
- A discussion of air toxics, including a qualitative discussion of health risks and current science.
- An estimate of the pollutant burden that will be generated by the No Action and Action Alternatives for each terminal for the NAAQS pollutants and several key air toxics. "Burden" means the mass of a pollutant produced in a given period. Burden does not mean the amount of a pollutant concentrated in a specific location. In this case, pollutant burden is expressed in tons per year.

- An estimate of the pollutant burden produced by mobile source activities on the local public roadway network near each terminal that would experience traffic volume changes. This burden analysis included the NAAQS pollutants and several key air toxics.
- A CO hotspot analysis at key intersections in the terminal areas that compared CO concentrations to the one- and eight-hour NAAQS. This was not a burden analysis but a concentration analysis, which defines the pollutant level at a specific location to which people are exposed.

#### 4.8.1 Air Quality Conformity

The Clean Air Act requires Michigan (and all other states) to have a *State Implementation Plan* (SIP) to demonstrate how it will attain and/or maintain National Ambient Air Quality Standards (NAAQS) (Table 4-20). SEMCOG, the Southeast Michigan Council of Governments, collaborates with the Air Quality Division of the Michigan Department of Environmental Quality (DEQ) on the work needed to prepare and/or update a SIP. SEMCOG is responsible for reviewing mobile source (vehicular) emissions in Southeast Michigan when projects are proposed for inclusion in their long-range transportation plan. SEMCOG's *2030 Regional Transportation Plan* (RTP) must undergo a quantitative analysis demonstrating that emissions levels associated with implementing planned projects are below designated emissions level limits (budgets) set forth in the SIP. In so doing, SEMCOG is managing and facilitating the transportation air quality conformity process in Southeast Michigan. The DIFT project is subject to air quality transportation conformity review through SEMCOG's inclusion of any DIFT roadway improvements in its RTP. This will occur after the public hearing when a preferred alternative is determined.

**Table 4-20**  
**National Ambient Air Quality Standards**

Pollutants	Average Time	Primary Standard <sup>a</sup>	Secondary Standard <sup>b</sup>
Carbon Monoxide	1-hr	35 ppm (40mg/m <sup>3</sup> )	No Secondary Standard
	8-hr	9 ppm (10mg/m <sup>3</sup> )	No Secondary Standard
Lead	Quarter	1.5 µg/m <sup>3</sup>	Same as Primary
Nitrogen Dioxide	Annual	0.053 ppm (100µg /m <sup>3</sup> )	Same as Primary
Ozone	1-hr	0.12 ppm (235µg/m <sup>3</sup> )	Same as Primary
	8-hr	0.08 ppm (157µg/m <sup>3</sup> )	Same as Primary
Respirable Particulate Matter (10 microns or less) (PM <sub>10</sub> )	24-hr	150 µg/m <sup>3</sup>	Same as Primary
	Annual	50 µg/m <sup>3</sup>	Same as Primary
Respirable Particulate Matter (2.5 microns or less) (PM <sub>2.5</sub> )	24-hr	65 µg/m <sup>3</sup>	Same as Primary
	Annual	15 µg/m <sup>3</sup>	Same as Primary
Sulfur Dioxide	3-hr	–	0.5 ppm (1300µg/m <sup>3</sup> )
	24-hr	0.14 ppm (365µg/ m <sup>3</sup> )	–
	Annual	0.03 ppm (235µg/ m <sup>3</sup> )	–

Note: ppm is parts per million; mg is milligrams; µg is micrograms.

<sup>a</sup> Primary NAAQS: the levels of air quality that the EPA judges necessary, with an adequate margin of safety, to protect the public health.

<sup>b</sup> Secondary NAAQS: the levels of air quality that the EPA judges necessary to protect the public welfare from any known or anticipated adverse effects.

Source: Code of Federal Regulations, Title 40, Part 50.

Air quality conformity analyses for mobile sources required in Southeast Michigan currently involve two major pollutants: carbon monoxide (CO) and ozone (and its precursors volatile organic compounds and nitrogen oxides). A new standard will require such analysis for PM<sub>2.5</sub> by April 2006. This attainment status of the region is as follows:

**Carbon monoxide** - In 1999, Wayne, Oakland, and Macomb counties were redesignated from nonattainment to maintenance for CO. Similar to ozone, a positive conformity determination for CO requires that emissions in any future year remain at or below the approved mobile source emissions budget of 3,843 tons/day. On January 28, 2005, (effective March 28, 2005) EPA approved a revised CO budget of 1946 tons /day.

**One-hour ozone** - In 1995, the seven-county SEMCOG region was redesignated from nonattainment to maintenance for the one-hour ozone standard. At that time, a maintenance plan was developed establishing emissions budgets for the two precursors of ozone: volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>). In order for a conformity determination to be made with regard to the one-hour ozone standard, VOCs emissions cannot exceed the mobile source emissions budgets of 218 tons/day for years 2004-2014, and 173 tons/day for years 2015 and beyond. For NO<sub>x</sub>, emissions cannot exceed the budget of 413 tons/day in any analysis year. The 8-hour standard (see below) now supplants the 1-hour standard, but until an 8-hour emissions budget is established, conformity will be the same as for 1-hour.

**Eight-hour ozone** - On April 15, 2004, the EPA officially designated the seven-county SEMCOG region, plus Lenawee County, a moderate nonattainment area for the 8-hour ozone standard. In September 2004, EPA approved the reclassification of the area from moderate to marginal ozone nonattainment. A SIP, which must be approved by 2007, is currently being developed to address this issue. As noted, for the time being, the test of 8-hour conformity remains the same as that used to demonstrate conformity for one hour.

**PM<sub>10</sub>** - As mobile sources in Southeast Michigan currently meets the NAAQS for this pollutant, a regional transportation conformity analysis is not required.

**PM<sub>2.5</sub>** - EPA designated seven counties in Southeast Michigan as nonattainment for this new standard December 15, 2004. Conformity determinations for PM<sub>2.5</sub> will be required by April 5, 2006.

The project must be included in SEMCOG's cost-feasible *Regional Transportation Plan and Transportation Improvement Program* (TIP) to advance to design. To be included on the plan and TIP, it must be consistent with the State Implementation Plan (SIP). When analyzed together with other plan elements, the air pollution generated must not exceed "budgets" established in the SIP. After the public hearing, when a preferred alternative is determined; the DIFT project elements that cause changes to the transportation network will be evaluated by SEMCOG for air quality conformity.

#### **4.8.2 Pollution Trends – NAAQS Pollutants and Air Toxics**

This section presents: 1) information about air quality trends and measures EPA is taking to improve air quality; 2) data from air pollution monitoring stations nearest the terminals; and, 3) how these measures relate to PM<sub>2.5</sub> and air toxics.

## **Air Quality Trends and EPA Measures to Improve Air Quality**

EPA has recently implemented regulations related to on-road diesel engines, fuels, and non-road equipment, including that used on railroad yards. These regulations will substantially improve air quality. Before discussing these measures, it is of interest to review several relevant aspects of key pollutants.

Diesel exhaust is a complex mixture of inorganic and organic (carbon-based) compounds that occur as a blend of gases and particles. The gaseous components include nitrogen oxides, sulfur compounds, and low-molecular-weight hydrocarbons, such as the aldehydes, benzene, 1,3-butadiene, and polynuclear aromatic hydrocarbons. The particle phase of diesel exhaust consists of elemental carbon, adsorbed organic compounds and small amounts of sulfate, nitrate, metals and other trace elements. Diesel particulate matter (DPM) has been estimated to comprise about six percent of the total PM<sub>2.5</sub> inventory nationwide but more in urban areas, excluding natural and miscellaneous sources (U.S. EPA, 2002).

Compounds of most specific interest for the DIFT project are those found in particulate matter and, to a lesser degree, volatile organic compounds (VOCs), which are also emitted by diesel vehicles. Data from the 1996 National Toxics Inventory indicate that mobile sources account for approximately 50 percent of air toxics emissions (U.S. EPA, 2000). Several of the air toxics that EPA has identified as priority mobile source air toxics (MSATs) constitute a subset of all VOCs. The MSATs considered in the DIFT environmental impact analysis (see Air Quality Protocol – Appendix E) are benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and acrolein. Also included on EPA's list is diesel particulate matter (DPM). These particular air toxics were selected to be included in the burden analysis because: 1) mobile sources, both on-road and non-road, contribute the majority of annual emissions for five of these air toxics (acetaldehyde, acrolein, benzene, 1,3-butadiene and formaldehyde) on a national basis; 2) they are representative of the complete list of gaseous mobile source air toxics; and, 3) these air toxics are some of the more important ones from a health standpoint. It is important to note that almost all of the remaining hazardous air pollutants (HAPs) emitted by mobile sources are trace metals, and compounds associated primarily with the particulate phase. Stationary and area sources account for most the nationwide emissions of these HAPS.

EPA has issued a suite of motor vehicle and fuels regulations, including: 1) tailpipe emission standards for cars, SUVs, mini-vans, pickup trucks and heavy trucks and buses; 2) standards for cleaner-burning gasoline; 3) a national low-emission vehicle program; and, 4) standards for low-sulfur gasoline and diesel fuel. By the year 2020, these requirements are expected to reduce emissions of a number of air toxics (benzene, 1,3-butadiene, formaldehyde, and acetaldehyde) from highway motor vehicles by about 75 percent and diesel particulate matter by over 90 percent from 1990 levels (U.S. EPA, 2000).

In addition, EPA issued a regulation in May 2004 to control emissions from diesel-powered non-road engines, such as construction equipment and railroad locomotives. EPA also provides assistance in identifying and implementing voluntary programs, such as diesel retrofits, to achieve additional reductions.

The EPA-approved MOBILE6.2 model allows projections of future emission factors for the NAAQS pollutants and certain air toxics associated with mobile sources. The model accounts for the recent EPA regulatory changes. Emission factors vary by speed and type of vehicle. By focusing on representative vehicle types and speeds, future emission factors can be related to

trends over time (i.e. 2004, 2015, and 2025). Graphics illustrate substantial downward trends for the following representative conditions:

- Passenger vehicles and NAAQS pollutants at: a) 10 mph (Figure 4-28a), and b) 30 mph (Figure 4-28b)
- Passenger vehicles and air toxic pollutants at: a) 10 mph (Figure 4-28c), and b) 30 mph (Figure 4-28d)
- Trucks and NAAQS pollutants at: a) 10 mph (Figure 4-28e), and b) 30 mph (Figure 4-28f)
- Trucks and air toxic pollutants at: a) 10 mph (Figure 4-28g), and b) 30 mph (Figure 4-28h)

### **Monitoring Data**

Air pollution monitoring station data collected for the terminal areas are displayed in Figures 4-29 through 4-36. The information for the Livernois-Junction Yard is from the Detroit Linwood monitor (Station 26-163-0016) and the Dearborn Wyoming monitor (Station 26-163-0033). Information for the Oak and Moterm terminals is from the Detroit Oak Park monitor (Station 26-125-0001) for CO, ozone, and PM<sub>2.5</sub>. Data are not collected at this monitor for NO<sub>x</sub> and PM<sub>10</sub>, so the data from the Linwood and Wyoming monitors are the best available monitoring data.

The most critical of these data are particulate matter and ozone, because of the area's nonattainment status.

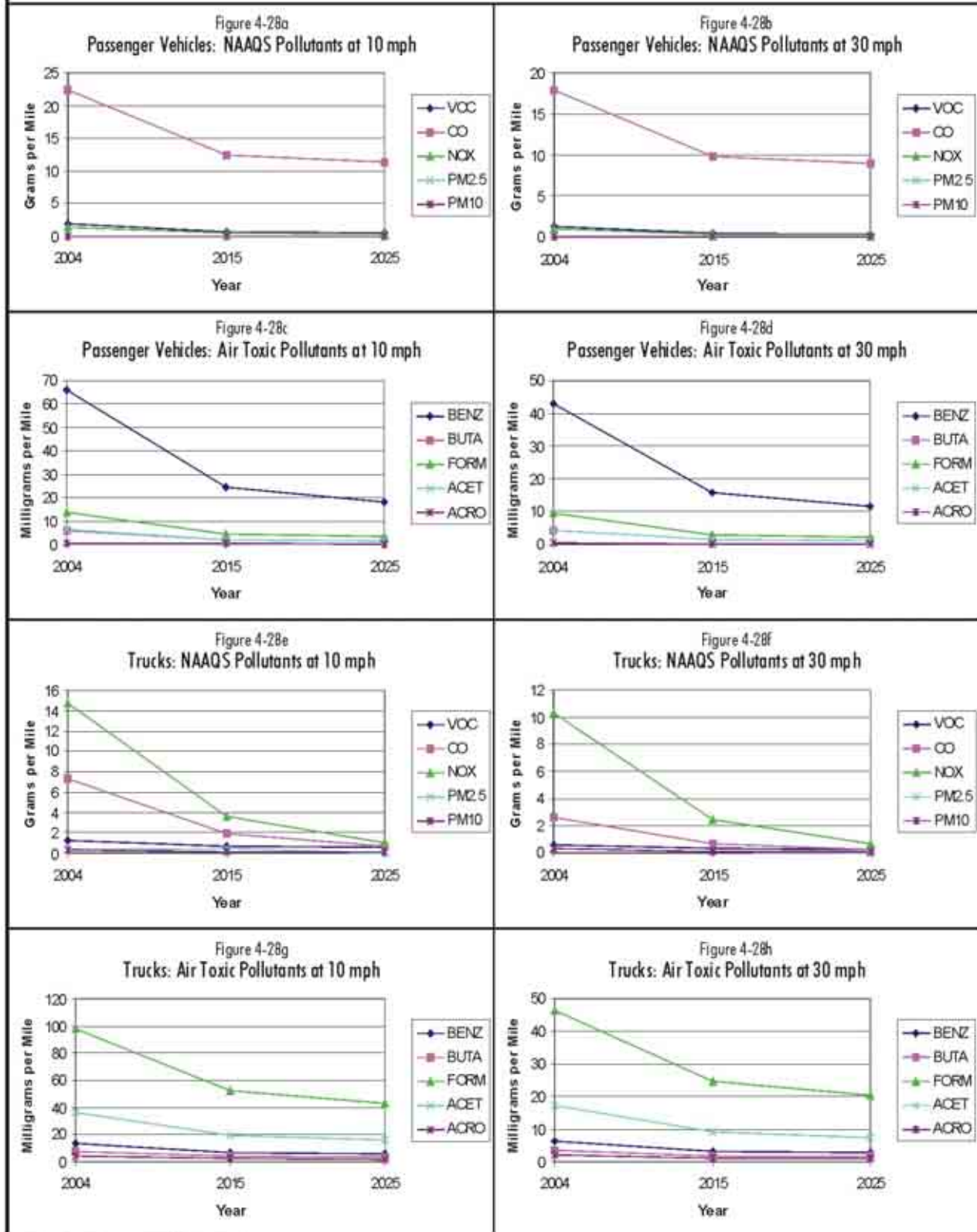
There is a downward trend in ozone at the Livernois-Junction Yard in terms of the 1-hour standard (Figure 4-30 top), but 8-hour average values have risen over the last several years and are above the standard (Figure 4-30 bottom). The pattern is similar at the CP/Oak and CN/Moterm terminal areas (as measured at the Oak Park Drive monitoring station, Figure 4-35). The ozone issue will be addressed by SEMCOG in a transportation conformity assessment of the DIFT. But, in that regard, the ability of the DIFT to divert some freight shipments from trucks to rail will have a positive regional effect on ozone.

For particulate matter at the CP/Oak and CN/Moterm terminal areas the 24-hour standard is not exceeded but the annual average has been (Figure 4-36 bottom). The Livernois-Junction Yard area shows a similar pattern, but the particulate values are higher. Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) measurements have been trending upward, except for the annual mean value of PM<sub>2.5</sub>. And, the measured annual mean values for the last several years have been above the NAAQS (Figure 4-32 bottom). The PM<sub>10</sub> values at the Wyoming Avenue monitoring station spiked in 2003 for an undetermined reason.

#### **4.8.3 Air Toxics and PM<sub>2.5</sub>– Health Effects and Limitations of Current Science**

Research is underway by EPA and others at a national level to evaluate ambient air toxics in order to understand their spatial variability in urban settings; evaluate data from mobile-source oriented monitors; and, provide data for the National Air Toxics Network maintained by EPA. One of the programs sponsored by EPA is the Detroit Air Toxics Pilot Project, which began collecting data from monitoring stations in 2001. Data from these programs may ultimately be used to develop standards to address health or environmental risks from air toxics.

Figure 4-28a - h  
Emission Factor Trends



SOURCE: EPA Computer Model MOBILE6.2  
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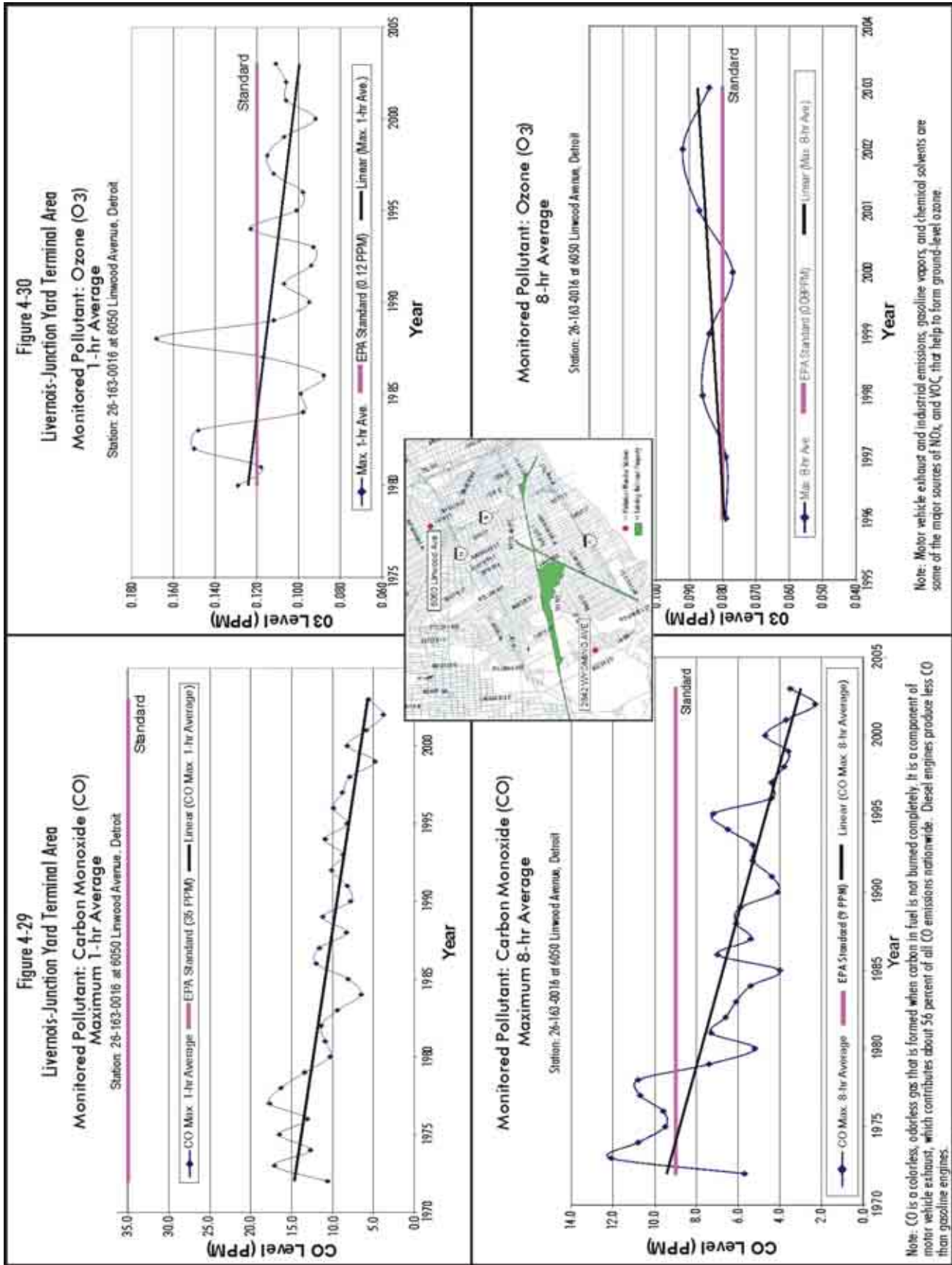
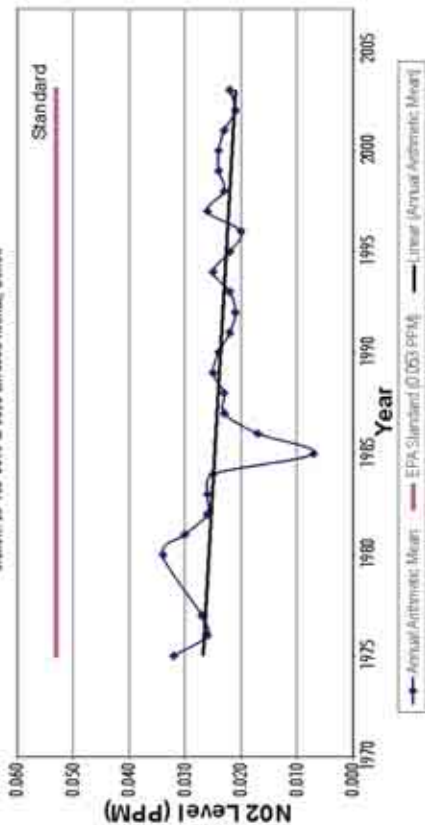




Figure 4-31  
Livermois-Junction Yard Terminal Area

Monitored Pollutant: Nitrogen Dioxide (NO<sub>2</sub>)  
Annual Mean

Station: 26-163-0016 at 6050 Linwood Avenue, Detroit

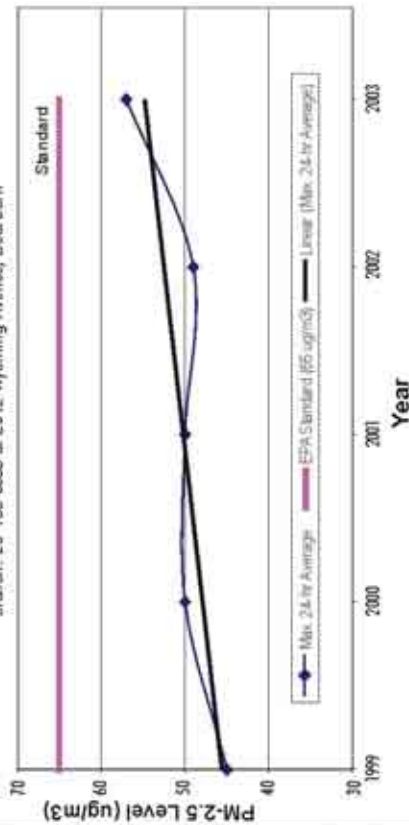


Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary sources of NO<sub>x</sub> are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels.

Figure 4-32  
Livermois-Junction Yard Terminal Area

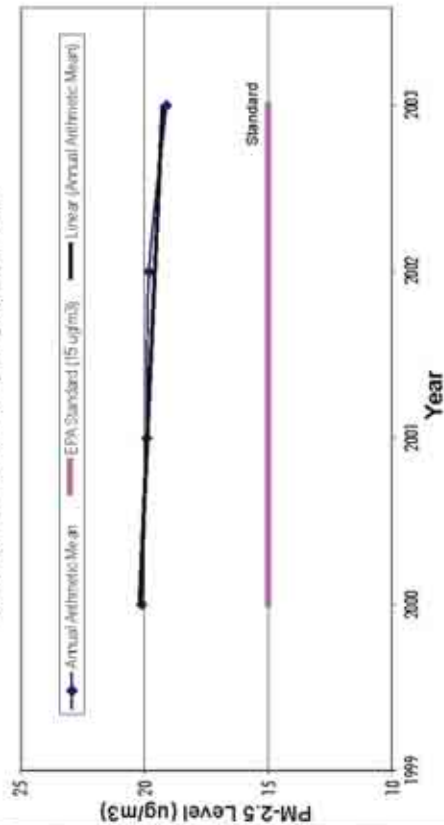
Monitored Pollutant: Particulate Matter (PM-2.5)  
24-hr Average

Station: 26-163-0033 at 2842 Wyoming Avenue, Dearborn



Monitored Pollutant: Particulate Matter (PM-2.5)  
Annual Mean

Station: 26-163-0033 at 2842 Wyoming Avenue, Dearborn



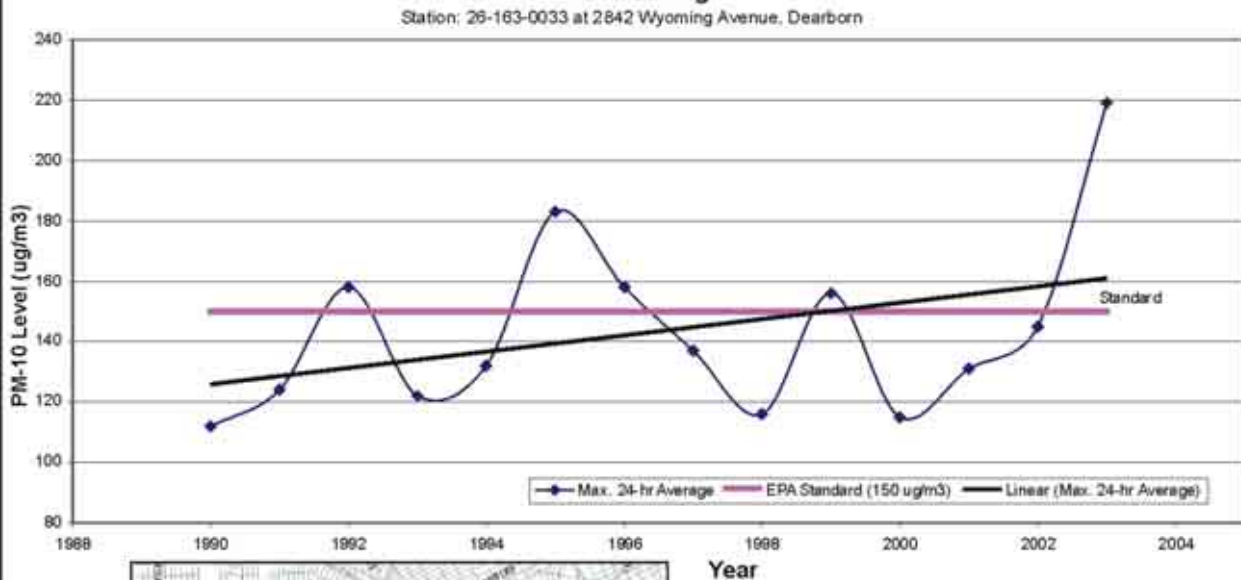
Particulates come directly from cars, trucks, buses, factories, construction sites, tilled fields, unpaved roads, stone crushing, and burning of wood. They also form as burning fuels react with sunlight and water vapor. PM 2.5 are fine particulates that can be inhaled deep into the lungs.



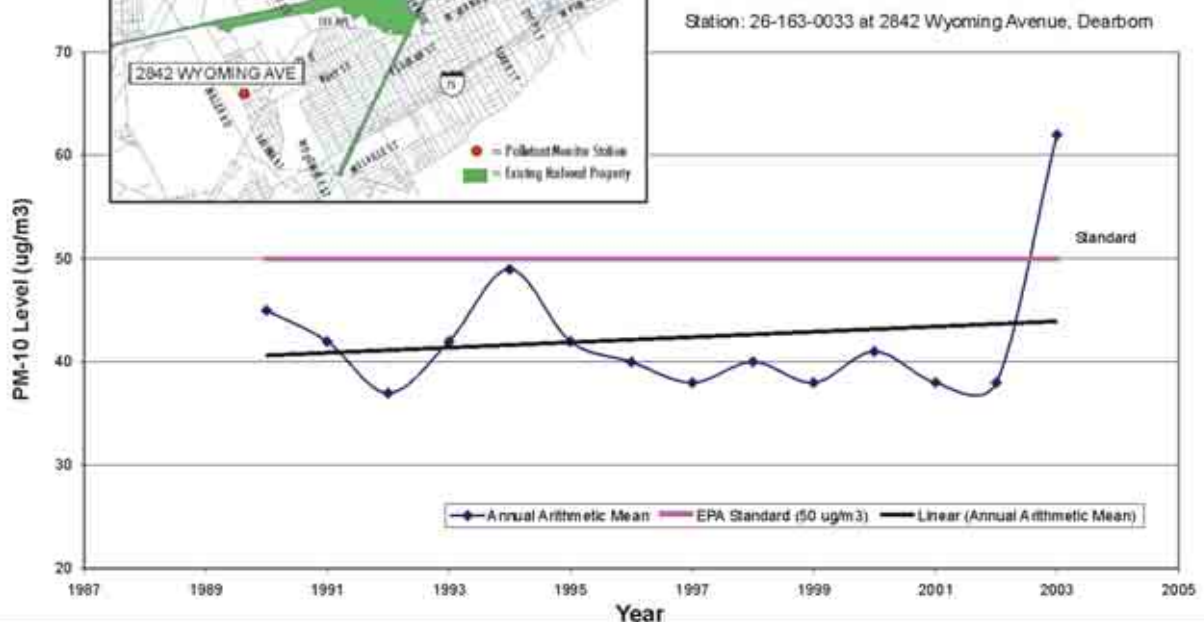
SOURCE: U.S. EPA AirData  
1. Please click on the map to view the data for each station.



Figure 4-33  
 Livernois-Junction Yard Terminal Area  
 Monitored Pollutant: Particulate Matter (PM-10)  
 24-hr Average



Monitored Pollutant:  
 Particulate Matter (PM-10)  
 Annual Mean

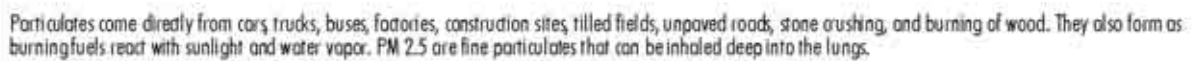


Particulates come directly from cars, trucks, buses, factories, construction sites, tilled fields, unpaved roads, stone crushing, and burning of wood. They also form as burning fuels react with sunlight and water vapor. PM10 is ten microns or larger in size.

SOURCE: U.S. EPA AirData  
 L:\Project\2010-Air\Graphics\Environ\433\0433-01-01



Station: 26-125-0001 at 13701 Oak Park Drive, Oak Park.



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Some health agencies and research institutions have reported on the health effects of air toxics and PM<sub>2.5</sub>. Exposure to these pollutants at sufficient concentrations and durations may result in an increased chance of experiencing serious health effects. These health effects appear to include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory and other health problems. The health effects from some air toxics may appear following a short period of exposure, while others may only appear after long-term exposure. “For these (and other) reasons, it is frequently very difficult to conclusively associate environmental levels and potentially linked public health impacts” (MDEQ, 2003). Additionally, supporting documents for the health assessment of diesel engine exhaust used in the development of EPA’s non-road rules acknowledge that “the assessment’s health hazard conclusions are based on exposure to exhaust from diesel engines built prior to the mid-1990s”....and “as new diesel engines with cleaner exhaust emissions replace existing engines, the applicability of the conclusions in this Health Assessment Document will need to be re-evaluated” (U.S. EPA, 2002). This is particularly pertinent as the implementation of the DIFT project will occur only after EPA’s requirement that sulfur be taken out of fuel (2007) and all on- and off-road diesel engines will be substantially cleaner.

In addition to the uncertainty associated with quantifying the health risks of air toxics and PM<sub>2.5</sub>, issues related to quantifying impacts and the lack of standards have been raised. There are no NAAQS for air toxics, and methods for quantifying impacts are subject to scientific debate. Unlike smokestack testing for point sources, it is not feasible to directly measure mobile source emissions, given the number of tailpipes that would constitute any inventory. Modeling approaches, however, can provide a tool to assess project impacts and to compare the relative merits of various control strategies or project alternatives. But, although transportation and air quality models are constantly being tested and improved, models to calculate the dispersion of PM<sub>2.5</sub> and air toxics, and the resulting concentrations at any given point, have not been adopted for regulatory use.

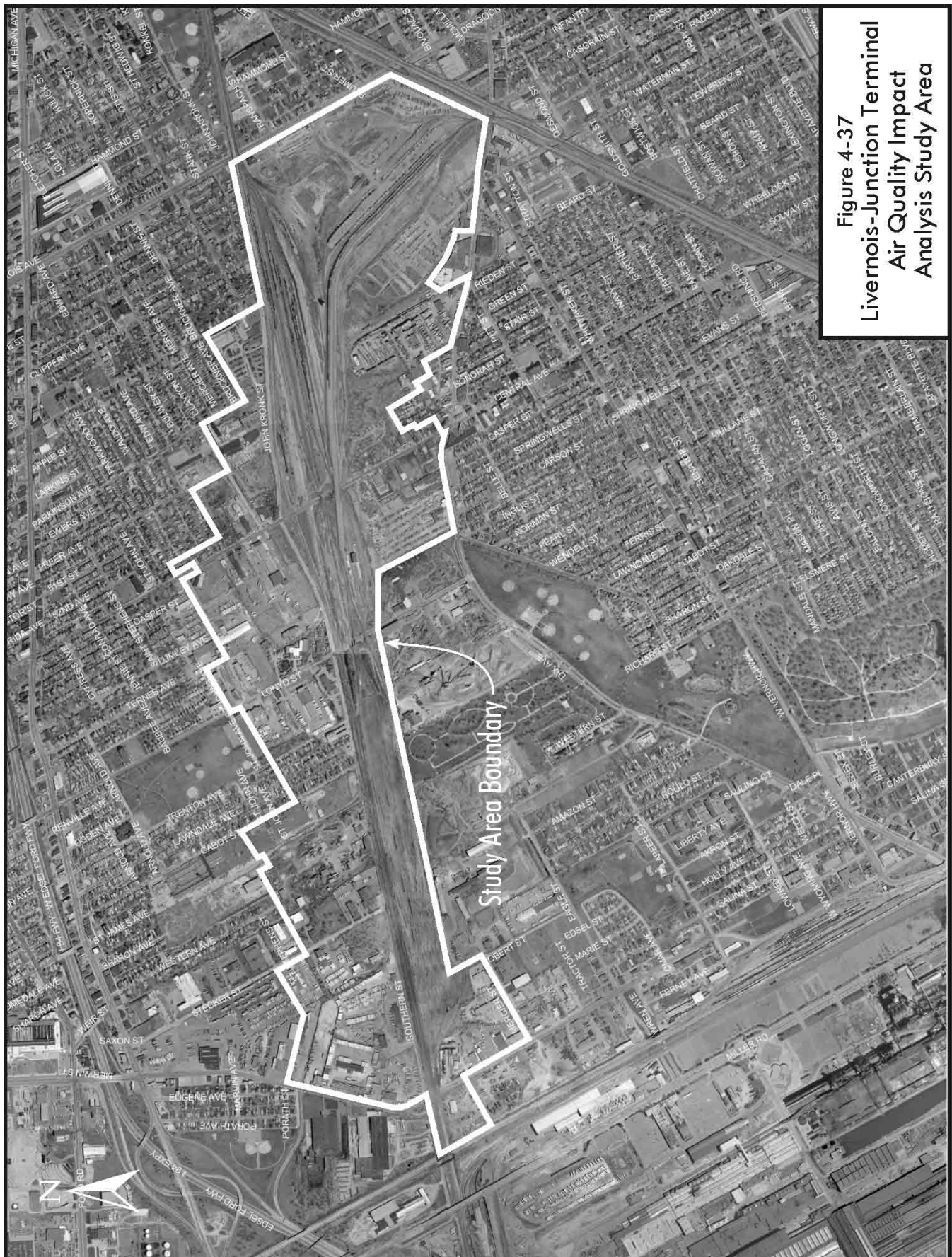
These limitations preclude, at this time, the DIFT Study from conducting a quantitative pass/fail comparison to standards for air toxics and PM<sub>2.5</sub>. Nevertheless, in order to gain some insight into the relative differences among the alternatives with regard to air toxics and PM<sub>2.5</sub>, the pollutant burdens of the proposed alternatives are determined for all terminal sites and on the surrounding roadway network. This approach is consistent with the requirements of 40 CFR 1502.22 and 1502.24.

#### **4.8.4 Terminal Pollutant Burden Estimates**

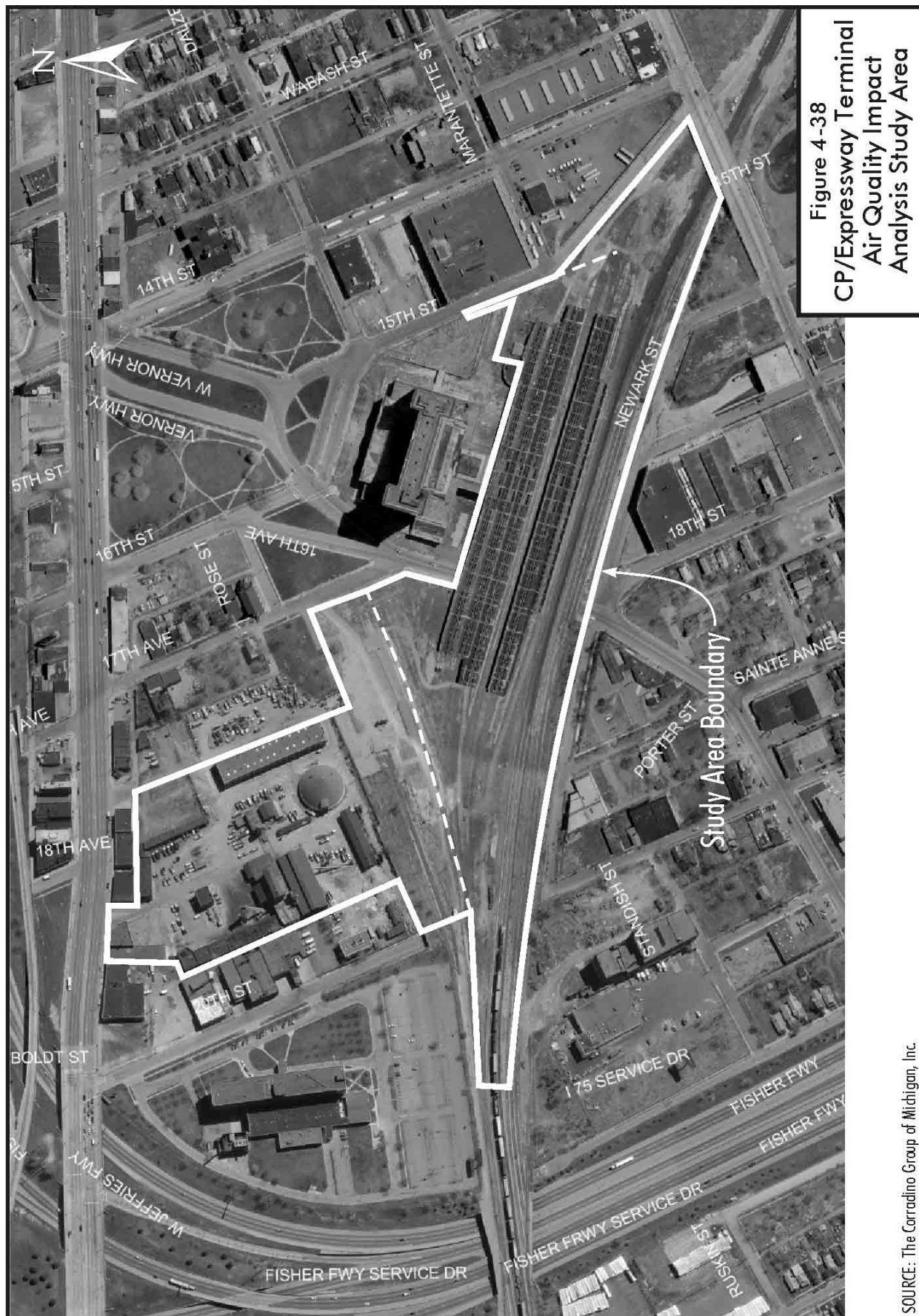
For each terminal, an area has been defined that covers the existing yard and any area of potential terminal expansion (Figures 4-37, 4-38, 4-39, and 4-40). Within these areas, the total pollution emitted has been calculated in tons per year for 2004, 2015, and 2025 for each alternative. The pollution burden analysis addresses:

- Visitor and employee traffic on the rail yard.
- Truck activity on the rail yard related to container delivery and pickup.
- Container handling on the yard - moving containers between delivery points and trains.
- Locomotive idling and movement on the yard.
- Fugitive dust from paved and unpaved yard areas.
- Vehicular travel on sites of businesses to be acquired.
- Vehicular travel on streets that would be inside the terminal with project development: John Kronk and a section of Lonyo.
- Fugitive dust from business sites and the public streets that would be closed.





SOURCE: The Carradino Group of Michigan, Inc.  
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SOURCE: The Corradino Group of Michigan, Inc.  
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The terminal pollutant burden has been calculated for the following NAAQS pollutants: carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NO<sub>x</sub>), particulates of 10 microns or smaller (PM<sub>10</sub>), particulates of 2.5 microns or smaller (PM<sub>2.5</sub>), and volatile organic compounds (VOC). It has likewise been calculated for the following air toxics: benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, and diesel particulate matter (DPM).

This information has been estimated for both on-road vehicles (cars and trucks) and non-road equipment (lifters, locomotives and other rail yard equipment) operating at a terminal. The emission factors (in grams/mile) for on-road sources (cars and trucks) are developed from MOBILE6.2. These factors are available for both NAAQS pollutants and air toxics. Emission factors for mobile source activity at 2.5 miles per hour were used to estimate idling conditions on the terminal yards because MOBILE6.2 does not generate emission factors for idling vehicles. The burden for on-road activity was based on vehicle miles of travel on the site.

Emissions from terminal tractors, hostlers and cranes were estimated using *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling – Compression-Ignition*, EPA420-P-04-009, April 2004 and other technical guidance that support EPA's NONROAD model. Emission factors for non-road air toxics were taken from technical documents supporting EPA's 1999 National Toxics Inventory, in consultation with EPA and SEMCOG. Information regarding equipment and usage activity at each terminal was obtained through interviews with terminal managers.

Emission factors for locomotives were obtained from EPA's 1997 "Emission Factors for Locomotives" (EPA420-F-97-051). A load factor, representing the portion of the engine's horsepower needed for an activity, was applied to the emission factor in order to obtain a realistic emission estimate. PM<sub>2.5</sub> emissions estimates were derived using a PM<sub>2.5</sub> fraction of 0.97 as recommended by EPA April 2004. The burden for locomotives was based on the number of hours of operation on the site. Emission factors for locomotive air toxics were derived from the 1999 National Toxics Inventory technical document.

The burden analysis includes estimates of emission sources located outside the currently active terminals, extending to the limits of the expansion areas, i.e., Figures 4-37 through 4-40. Therefore, traffic of businesses to be relocated due to terminal expansion were added to the base-year total, but subtracted from the build alternatives when such facilities are removed by an alternative. And, the emissions from roads that will be closed and included within the footprint of a terminal were similarly included in the base year, but subtracted from the alternatives that close these roads to public use. Examples are John Kronk Street and Lonyo Avenue.

The PM<sub>2.5</sub> burden analysis includes fugitive dust emissions. Project-related dust emissions are important in this analysis because the build alternatives would reduce PM emissions by covering unpaved surfaces including exposed soil in terminal areas. This paving is built into the Action Alternatives and is not considered mitigation. Road/soil dust tends to have a lower percentage of PM<sub>2.5</sub> than diesel particulate matter; however, the sheer size of the unpaved terminal areas (e.g., at the Livernois-Junction Yard) represents a significant part of the total PM emissions (including PM<sub>2.5</sub>) that could be reduced by paving these areas. In the case of the Livernois-Junction Yard, analyses show that road/soil dust is a nuisance to DIFT neighbors because road/soil emissions are cool and not as buoyant as diesel emissions so they fall in a localized area in high concentrations. Diesel emissions are hot and buoyant so they tend to rise in the atmosphere and disperse over a wider area in relatively lower concentrations. EPA's "Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1: Stationary Point and Area Sources," revised December 2003, is the source of emission factors for fugitive dust emissions. The

approximate acreage of unpaved area on each terminal was calculated using GIS mapping tools and verified by site visit. The estimates include individual calculations for roads as well as unpaved yards.

Data presented here are totals for each terminal for each alternative (Table 4-21). Greater detail is provided in the *Air Quality Impact Analysis Technical Report*. In reviewing these results it is noted that nitrogen oxides (NO<sub>x</sub>) are good indicators of the overall pollution effects of the alternatives because they are diesel-engine based (cars produce little) and the data do not involve other considerations (like the dust with PM data). NO<sub>x</sub> is expected to drop from existing conditions to 2025 No Action conditions, increase under Alternative 2, then decrease somewhat under Alternatives 3 and 4. This pattern reflects: 1) the future drop in emissions from cleaner engines and fuels; then, 2) the increases related to more lifts affected by the efficiencies of operation brought about by Alternatives 3 and 4.

Alternative 1: No Action would experience reductions across the range of most pollutants, including mobile source air toxics (MSATs), compared to current conditions, except particulate matter (PM). This overall positive trend is forecast to result from lower on-road, non-road, and locomotive emissions factors associated with cleaner fuels and cleaner engines, as prescribed by EPA. The PM increase is the exception and that is mainly due to increased activity on the unpaved terminal surfaces under Alternative 1.

For Alternative 2: Improve/Expand Existing Terminals, most pollutants are forecast to be lower than existing conditions and to increase marginally over 2025 No Action conditions as the intermodal activity (lifts) are forecast to increase by almost 80 percent with improving/expanding the terminals. PM<sub>10</sub> would be reduced relative to the 2025 No Action conditions, as dust would be controlled by paving. PM<sub>2.5</sub> would be virtually unchanged overall. Paving would tend to reduce PM<sub>2.5</sub>, while increased intermodal activity would tend to increase it.

Alternative 3 would consolidate all intermodal operations at the Livernois-Junction Yard area. In that area, terminal pollutant burdens would increase over both No Action and Alternative 2 conditions because of the significant increase in intermodal activity (80 to 130 percent, respectively).

Alternative 4 is forecast to be associated with terminal pollutant burdens in this area at virtually the same amounts as No Action and Alternative 2, even though the intermodal activity of the Livernois-Junction Yard area is forecast to more than double. A similar comparison exists for the CN/Moterm terminal under Alternative 4.

Increased intermodal activity will shift freight from trucks to rail. This would reduce mileage and pollution. The expected reduction for Wayne County and the seven-county SEMCOG region is presented in Table 4-21a.

**Table 4-21**  
**Terminal Burdens – Annual Tons**

	CO	HC	NOx	PM10	PM2.5	VOCs	DPM	BENZ	BUTA	FORM	ACET	ACRO
<b>2004</b>												
SW Detroit/E Dearborn <sup>a</sup>	41.3	7.0	93.9	177.3	43.5	7.1	6.3	0.13	0.02	0.63	0.29	0.04
CP/Oak	9.5	1.8	25.7	29.2	8.6	1.8	1.9	0.03	0.01	0.19	0.09	0.01
CN/Moterm	6.4	1.1	14.1	4.4	1.8	1.1	1.0	0.02	0.004	0.14	0.07	0.01
<b>Totals</b>	<b>57.2</b>	<b>9.9</b>	<b>133.7</b>	<b>210.9</b>	<b>53.9</b>	<b>10.0</b>	<b>9.2</b>	<b>0.18</b>	<b>0.03</b>	<b>0.96</b>	<b>0.45</b>	<b>0.06</b>
<b>Alt. 1 – 2025 No Action</b>												
SW Detroit/E Dearborn <sup>a</sup>	18.2	3.9	28.3	227.1	47.3	3.9	1.2	0.07	0.02	0.41	0.19	0.03
CP/Oak	4.1	1.1	7.8	36.9	10.9	1.1	0.3	0.02	0.005	0.13	0.06	0.01
CN/Moterm	1.5	0.5	5.2	5.1	1.4	0.5	0.2	0.01	0.003	0.05	0.02	0.003
<b>Totals</b>	<b>23.8</b>	<b>5.5</b>	<b>41.3</b>	<b>269.1</b>	<b>59.6</b>	<b>5.5</b>	<b>1.7</b>	<b>0.09</b>	<b>0.03</b>	<b>0.59</b>	<b>0.27</b>	<b>0.04</b>
<b>Alt. 2 – 2025 Improve/Expand</b>												
SW Detroit/E Dearborn <sup>a</sup>	21.4	5.8	37.9	185.8	47.2	5.9	1.6	0.10	0.02	0.65	0.30	0.04
CP/Oak	3.3	1.6	9.6	21.7	5.8	1.6	0.4	0.03	0.01	0.20	0.09	0.01
CN/Moterm	1.9	0.7	6.4	8.8	2.4	0.7	0.2	0.01	0.004	0.08	0.04	0.005
<b>Totals</b>	<b>26.6</b>	<b>8.1</b>	<b>53.9</b>	<b>216.3</b>	<b>55.4</b>	<b>8.2</b>	<b>2.2</b>	<b>0.13</b>	<b>0.03</b>	<b>0.93</b>	<b>0.43</b>	<b>0.06</b>
<b>Alt. 3 - 2025 Consolidate</b>												
<b>Livernois-Junction</b>	<b>15.2</b>	<b>8.1</b>	<b>46.5</b>	<b>204.8</b>	<b>52.8</b>	<b>8.1</b>	<b>2.1</b>	<b>0.13</b>	<b>0.03</b>	<b>1.00</b>	<b>0.47</b>	<b>0.07</b>
<b>Alt. 4 - 2025 Composite</b>												
SW Detroit/E Dearborn <sup>a</sup>	13.0	7.2	39.1	160.9	41.6	7.2	1.8	0.12	0.03	0.90	0.42	0.06
CN/Moterm	1.9	0.7	6.4	8.8	2.4	0.7	0.2	0.01	0.004	0.08	0.04	0.005
<b>Totals</b>	<b>14.9</b>	<b>7.9</b>	<b>45.4</b>	<b>169.8</b>	<b>44.0</b>	<b>7.9</b>	<b>2.0</b>	<b>0.13</b>	<b>0.03</b>	<b>0.98</b>	<b>0.46</b>	<b>0.06</b>

<sup>a</sup>Includes the Livernois-Junction Yard, Expressway, Delray, and Triple Crown terminals.

Note: VOCs are volatile organic compounds, DPM is diesel particulate mater, BENZ is benzene, BUTA is 1,3, butadiene, FORM is formaldehyde, ACET is acetaldehyde, and ACRO is acrolein.

Source: The Corradino Group of Michigan, Inc.

**Table 4-21a**  
**Reduction of Pollutants Due to Truck-to-Rail Diversion for Each Action Alternative**

	CO	HC	NOx	PM10	PM2.5	VOCs	DPM	BENZ	BUTA	FORM	ACET	ACRO
<b>In Wayne Co.</b>												
<b>Totals</b>	<b>17.8</b>	<b>16.1</b>	<b>33.8</b>	<b>3.0</b>	<b>1.7</b>	<b>15.9</b>	<b>1.7</b>	<b>0.17</b>	<b>0.10</b>	<b>1.30</b>	<b>0.48</b>	<b>0.06</b>
<b>In Southeast Michigan</b>												
<b>Totals</b>	<b>48.7</b>	<b>37.7</b>	<b>128.9</b>	<b>11.8</b>	<b>6.7</b>	<b>37.2</b>	<b>6.7</b>	<b>0.41</b>	<b>0.24</b>	<b>3.05</b>	<b>1.12</b>	<b>0.14</b>

Note: VOCs are volatile organic compounds, DPM is diesel particulate mater, BENZ is benzene, BUTA is 1,3, butadiene, FORM is formaldehyde, ACET is acetaldehyde, and ACRO is acrolein.

Source: The Corradino Group of Michigan, Inc.

Further information regarding the sources of the various pollutants at the terminals is presented in Table 4-21b. The regulated on-road sources include automobiles and trucks. The recently regulated off-road vehicles include the container handling equipment and locomotives. Road and yard dust is shown separately because it is the volume of such material.

#### **4.8.5 Public Roadway Pollutant Burden Estimates**

A network of local roads near each terminal that could be influenced by the project has been identified (Figure 4-41). These include roads that would: 1) be used by new DIFT traffic; 2) have traffic changes due to the closure of Lonyo; or, 3) experience changes in auto and truck traffic as businesses are relocated to accommodate terminal development.

The traffic changes resulting from each alternative are summarized as follows:

- Alternative 1: No Action
  - ✓ Background auto and truck traffic will grow 25 percent between 2000 and 2025.
- Alternative 2: Improve/Expand Existing Terminals
  - ✓ Livernois-Junction Yard – DIFT trucks will use either Wyoming or Livernois. (Under Option A that maintains the Dix/Waterman/Vernor gate, traffic could use Livernois/Dragoon south of Dix, but in Options B and C, all Livernois traffic would be to/from the north on Livernois and connect with I-94, and Dragoon will not be a route to the intermodal terminal.)
  - ✓ CP/Expressway terminal – Traffic would link directly to Michigan Avenue, rather than using 14th Street.
  - ✓ CP/Oak terminal – A new entrance direct to Evergreen and the ramps linking to I-96 would be created, ending intermodal truck use of the Southfield Freeway frontage roads and such local streets as Artesian.
  - ✓ CN/Moterm terminal – Intermodal truck traffic would be eliminated from Fair and Chesterfield Streets, as the terminal would be accessed directly south of 8 Mile Road into the State Fairgrounds.
- Alternative 3: Consolidate – DIFT truck traffic would use Wyoming and Livernois (north of the terminal gate). Local traffic on Lonyo would either shift to Central or to Wyoming, when Lonyo is closed at the rail yard boundaries. Intermodal activity would be eliminated at other terminals.
- Alternative 4: Composite – The approach is similar to Alternative 3 at the Livernois-Junction yard and the same as Alternative 2 at CN/Moterm, as CN operations would not be consolidated, but expand into the State Fairgrounds.

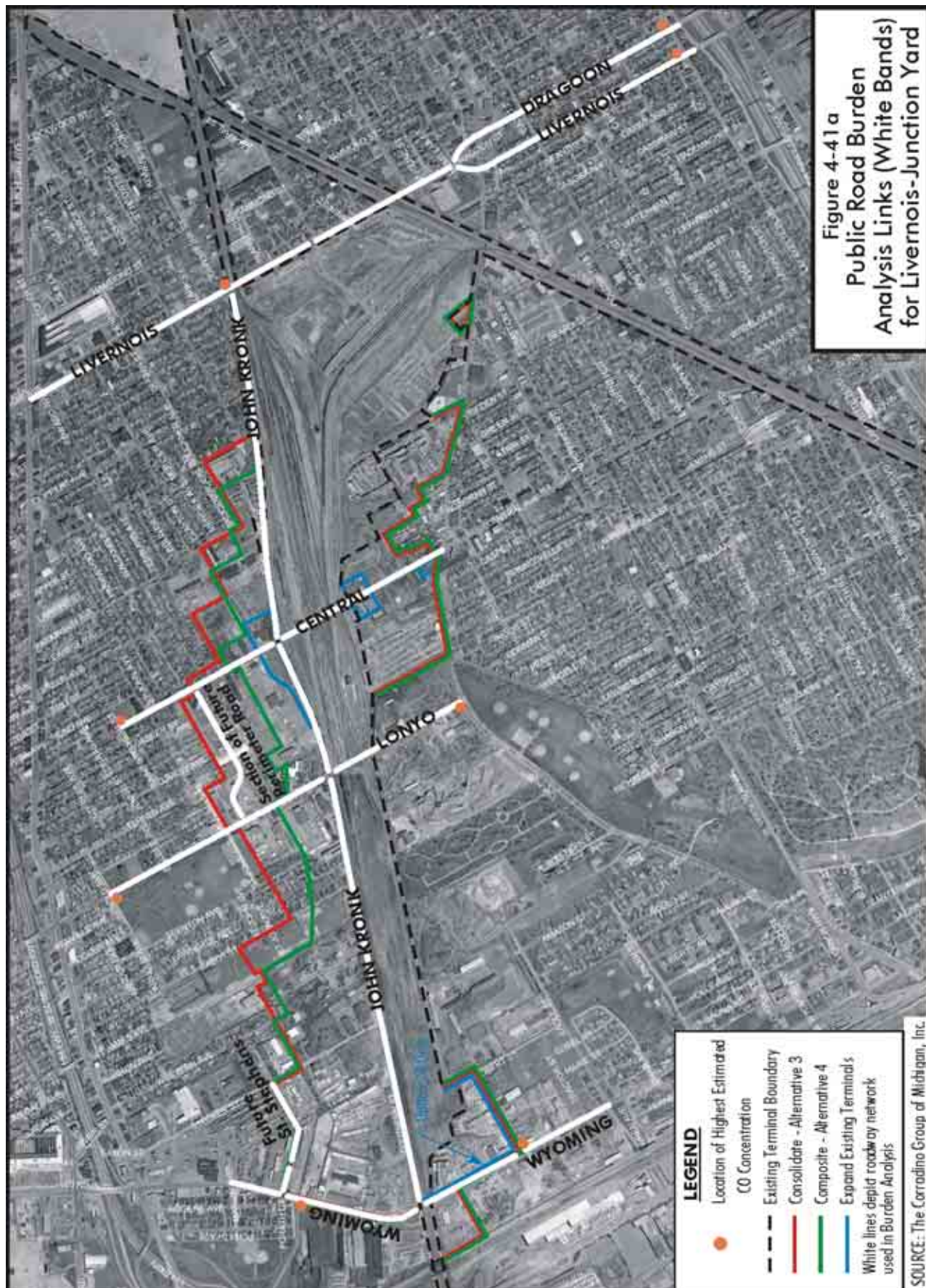
Using available information on background traffic levels, traffic shifts were calculated, with new intermodal truck traffic added, and traffic from displaced businesses removed. The vehicle miles of travel were calculated by link, and, using estimated speeds, the pollutant burden for each link was calculated.

**Table 4-21b**  
**Terminal Burden by Activity Type – Annual Tons**

	CO	HC	NOx	PM10	PM2.5	VOCs	DPM	BENZ	BUTA	FORM	ACET	ACRO
<b>2004</b>												
Automobiles/Trucks	29.7	2.8	17.7	0.5	0.4	2.8	0.5	0.07	0.01	0.11	0.04	0.00
Container Handling	21.7	5.0	77.1	7.5	7.3	5.0	7.3	0.10	0.01	0.76	0.38	0.06
Locomotives	5.8	2.1	38.9	1.5	1.4	2.2	1.4	0.01	0.01	0.09	0.03	0.00
Road/Yard Dust	0.0	0.0	0.0	201.4	44.8	0.0	0.0	0.00	0.00	0.00	0.00	0.00
<b>Totals</b>	<b>57.2</b>	<b>9.9</b>	<b>133.7</b>	<b>210.9</b>	<b>53.9</b>	<b>10.0</b>	<b>9.2</b>	<b>0.18</b>	<b>0.03</b>	<b>0.96</b>	<b>0.45</b>	<b>0.06</b>
<b>Alt. 1 - 2025 No Action</b>												
Automobiles/Trucks	12.4	1.0	1.5	0.2	0.2	1.0	0.1	0.02	0.01	0.05	0.02	0.00
Container Handling	2.6	2.7	5.5	0.4	0.4	2.7	0.5	0.05	0.01	0.40	0.20	0.03
Locomotives	8.8	1.8	34.3	1.2	1.1	1.8	1.1	0.02	0.01	0.14	0.05	0.01
Road/Yard Dust	-	-	-	267.3	57.9	-	-	-	-	-	-	-
<b>Totals</b>	<b>23.8</b>	<b>5.5</b>	<b>41.3</b>	<b>269.1</b>	<b>59.6</b>	<b>5.5</b>	<b>1.7</b>	<b>0.09</b>	<b>0.03</b>	<b>0.59</b>	<b>0.27</b>	<b>0.04</b>
<b>Alt. 2 - 2025 Improve/Expand</b>												
Automobiles/Trucks	11.5	1.4	2.3	0.4	0.2	1.4	0.1	0.02	0.01	0.09	0.03	0.00
Container Handling	4.2	4.5	9.2	0.7	0.7	4.5	0.7	0.09	0.01	0.67	0.34	0.05
Locomotives	10.9	2.2	42.4	1.4	1.4	2.3	1.4	0.02	0.01	0.17	0.06	0.01
Road/Yard Dust	-	-	-	213.8	53.1	-	-	-	-	-	-	-
<b>Totals</b>	<b>26.6</b>	<b>8.1</b>	<b>53.9</b>	<b>216.3</b>	<b>55.4</b>	<b>8.2</b>	<b>2.2</b>	<b>0.13</b>	<b>0.03</b>	<b>0.93</b>	<b>0.43</b>	<b>0.06</b>
<b>Alt. 3 - 2025 Consolidate</b>												
Automobiles/Trucks	1.8	1.3	2.4	0.4	0.3	1.2	0.2	0.01	0.01	0.10	0.04	0.00
Container Handling	4.8	5.1	10.5	0.9	0.8	5.1	0.8	0.11	0.01	0.77	0.38	0.06
Locomotives	8.6	1.7	33.6	1.1	1.1	1.8	1.1	0.01	0.01	0.13	0.05	0.01
Road/Yard Dust	-	-	-	202.4	50.6	-	-	-	-	-	-	-
<b>Totals</b>	<b>15.2</b>	<b>8.1</b>	<b>46.5</b>	<b>204.8</b>	<b>52.8</b>	<b>8.1</b>	<b>2.1</b>	<b>0.13</b>	<b>0.03</b>	<b>1.00</b>	<b>0.47</b>	<b>0.07</b>
<b>Alt. 4 - 2025 Composite</b>												
Automobiles/Trucks	1.68	1.1	2.1	0.30	0.23	1.08	0.15	0.01	0.01	0.09	0.03	0.00
Container Handling	4.71	5.1	10.3	0.90	0.78	5.08	0.78	0.10	0.01	0.76	0.38	0.06
Locomotives	8.5	1.7	33.0	1.12	1.1	1.7	1.1	0.0	0.0	0.1	0.1	0.0
Road/Yard Dust	-	-	-	167.5	41.9	-	-	-	-	-	-	-
<b>Totals</b>	<b>14.9</b>	<b>7.9</b>	<b>45.4</b>	<b>169.8</b>	<b>44.0</b>	<b>7.9</b>	<b>2.0</b>	<b>0.13</b>	<b>0.03</b>	<b>0.98</b>	<b>0.46</b>	<b>0.06</b>

Note: VOCs are volatile organic compounds, DPM is diesel particulate mater, BENZ is benzene, BUTA is 1,3, butadiene, FORM is formaldehyde, ACET is acetaldehyde, and ACRO is acrolein.

Source: The Corradino Group of Michigan, Inc.





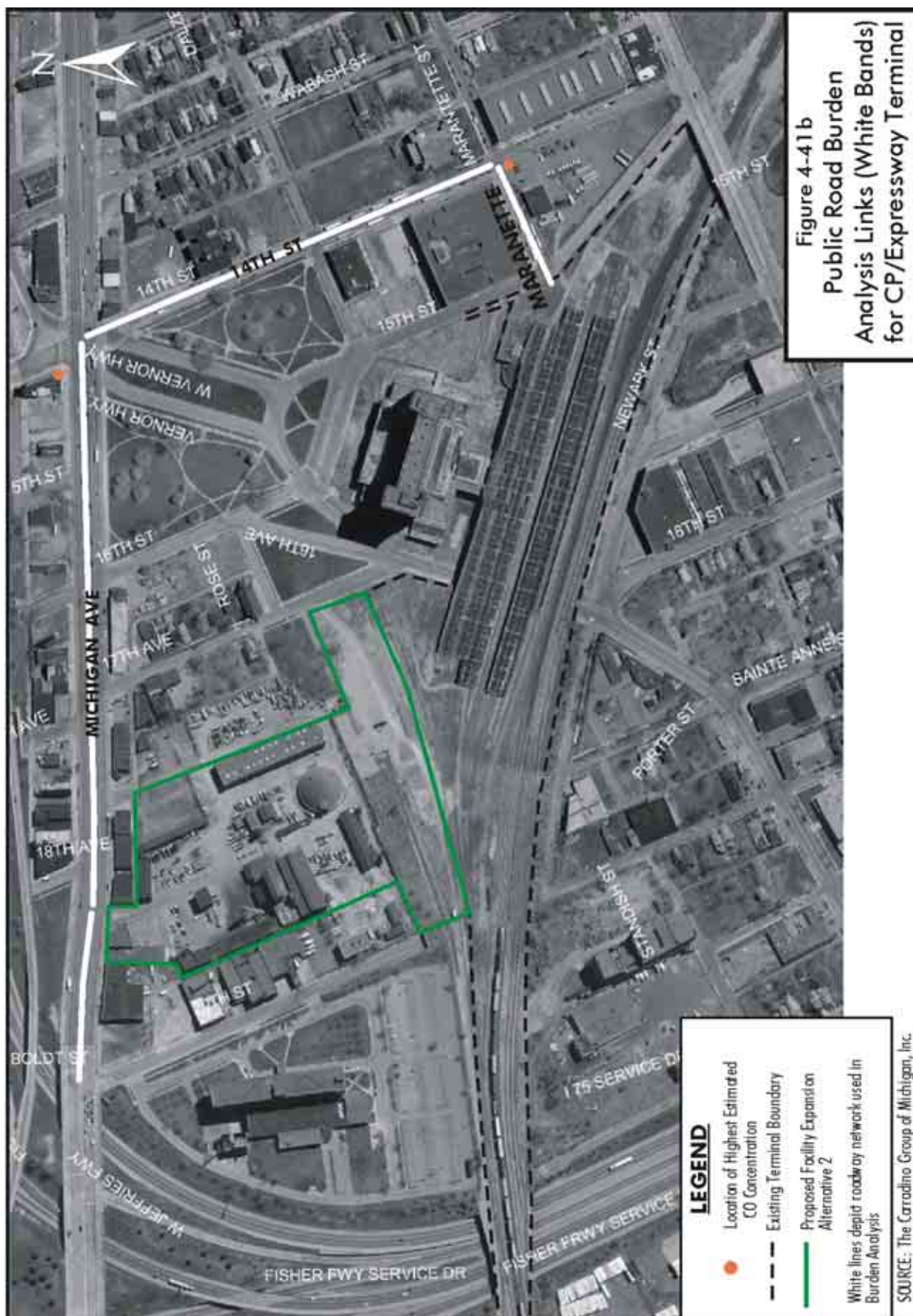








Table 4-22 shows the results for autos and trucks. The auto component of local road traffic produces the majority of the pollution, due to the much greater number of cars than trucks on the roadway system. This is particularly so for CO and hydrocarbons (HC). Trucks produce far more NOx per vehicle. Particulates are also produced more heavily by trucks, despite the fact that they are fewer in number. Nevertheless, even for NOx and particulates, in the future, no more than 30 percent is produced on the local road network by trucks.

Car traffic is also forecast to produce more air toxics than trucks for every pollutant for the roadway network around each terminal, with the exception of the Livernois-Junction Yard area, under Alternative 2. Under the latter scenario, the total truck contribution of the formaldehyde burden is about 55 percent of the total. For all other alternatives, and for all terminals, MSATs for trucks represent no more than 40 percent of all toxic burdens for the entire roadway network.

The roadway network pollution burden of Alternative 1, i.e., No Action in 2025, shows substantial decreases in the emission burden on the local roadways compared to current conditions, even with an increase in intermodal activity. This results from cleaner engines and fuel as mandated by EPA.

In 2025, the forecast of pollutant burdens on the Alternative 2 roadway system display virtually no difference, compared to taking no action, even as the intermodal activity would increase. That condition exists because both roadway systems carry the same background traffic while DIFT truck traffic is a relatively small contributor to total traffic and total pollution burden. The only exception to this is when Lonyo is closed, auto and non-DIFT truck traffic is diverted, in part, to Central Avenue. Under Alternative 2, there are few business relocations in the area served by these streets. As a result, the pollution burdens generated by auto/truck traffic are expected to increase on Central between John Kronk and St. Stephen Streets in 2025 by about 150 pounds per year for NOx compared to the 2025 No Action Alternative; by about 20 pounds per year for PM<sub>10</sub>; and, by about ten pounds per year for PM<sub>2.5</sub>. The change in the air toxics burden generated by auto/truck traffic on Central Avenue between Alternative 2 and the No Action condition in 2025 is expected to be about ten pounds annually. The section of Central Avenue under the terminal would have equipment to vent the air directly above the terminal. These increases in pollutants just noted for Central Avenue are forecast to be matched by decreases along Lonyo.

To gauge the level of these air toxic burdens, it is noted that the natural gas burned in 15 homes to run the furnace and hot water heater generates ten pounds of air toxics annually.<sup>13</sup>

Alternatives 3 and 4 would have the greatest number of lifts and the greatest number of trucks serving those lifts. Nevertheless, the pollutant burden on the local roadway systems around the terminals would be slightly less than the No Action Alternative. The expansion of the Livernois-Junction Yard would require the relocation of a number of businesses, including several along John Kronk. The removal of the auto and truck trips of these businesses, and the more efficient movement of intermodal trucks to the terminal via expressway-to-arterial roadway connections would mean less traffic on several neighborhood streets. So, for Alternatives 3 and 4, the roadway pollutant burdens would be less than today, and slightly less than the No Action. For the CN/Moterm terminal, the roadway pollutant burdens would be virtually the same as No Action.

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<sup>13</sup> Derived from data in U.S. EPA's AP-42, Compilation of Air Pollution Emission factors for natural gas combustion. Emissions are based on an average home natural gas use rate of 75,000 Btu/hr. for six months of the year.

Table 4-22

Public Roadway Pollutant Burden

	Auto												Truck												Auto Plus Truck													
	Tons Per Year												Tons Per Year												Tons Per Year													
	CO	HC	NOx	PM10	PM2.5	VOC	DPM	BENZ	BUTA	FORM	ACET	ACRO	CO	HC	NOx	PM10	PM2.5	VOC	DPM	BENZ	BUTA	FORM	ACET	ACRO	CO	HC	NOx	PM10	PM2.5	VOC	DPM	BENZ	BUTA	FORM	ACET	ACRO		
2004																																						
Livernois-Junction	523.9	34.5	29.3	0.76	0.37	34.7	0.0	1.25	0.13	0.27	0.12	0.014	8.0	1.7	31.3	1.13	0.97	1.73	0.97	0.02	0.05	0.14	0.01	0.006	532.0	36.2	60.6	1.89	1.34	36.4	0.97	1.27	0.18	0.41	0.13	0.020		
Expressway	73.3	4.7	4.0	0.11	0.05	4.7	0.0	0.17	0.02	0.04	0.02	0.002	0.9	0.2	3.9	0.14	0.12	0.20	0.12	0.00	0.01	0.02	0.00	0.001	74.2	4.9	7.9	0.25	0.17	4.9	0.12	0.17	0.02	0.05	0.02	0.003		
CP/Oak	181.1	10.9	9.6	0.25	0.12	10.9	0.0	0.40	0.04	0.09	0.04	0.005	1.4	0.3	6.9	0.25	0.21	0.31	0.21	0.00	0.01	0.03	0.00	0.001	182.5	11.2	16.5	0.50	0.33	11.2	0.21	0.41	0.05	0.11	0.04	0.006		
CN/Moterm	486.2	28.8	25.7	0.67	0.32	28.9	0.0	1.07	0.11	0.24	0.10	0.012	3.7	0.8	18.2	0.65	0.56	0.79	0.56	0.01	0.02	0.06	0.01	0.003	489.9	29.5	43.9	1.32	0.88	29.7	0.56	1.08	0.13	0.30	0.11	0.015		
Totals	1264.5	78.9	68.6	1.79	0.86	79.2	0.0	2.89	0.30	0.64	0.28	0.033	14.0	3.0	60.6	2.17	1.86	3.03	1.86	0.03	0.09	0.25	0.02	0.011	1278.6	81.8	129.0	3.96	2.72	82.2	1.86	2.93	0.38	0.87	0.30	0.044		
2025 Alt. 1: No Action																																						
Livernois-Junction	315.4	10.4	7.7	0.87	0.39	10.4	0.0	0.41	0.04	0.08	0.04	0.004	1.0	0.9	2.5	0.25	0.14	0.94	0.14	0.01	0.03	0.08	0.01	0.003	316.4	11.3	10.1	1.11	0.53	11.4	0.14	0.42	0.07	0.16	0.04	0.008		
Expressway	43.9	1.4	1.0	0.12	0.05	1.4	0.0	0.06	0.01	0.01	0.00	0.001	0.1	0.1	0.3	0.03	0.02	0.11	0.02	0.00	0.00	0.01	0.00	0.000	44.0	1.5	1.4	0.15	0.07	1.5	0.02	0.06	0.01	0.02	0.01	0.001		
CP/Oak	107.9	3.2	2.5	0.29	0.13	3.3	0.0	0.13	0.01	0.03	0.01	0.001	0.2	0.2	0.5	0.05	0.03	0.17	0.03	0.00	0.00	0.01	0.00	0.001	108.0	3.4	3.0	0.34	0.16	3.4	0.03	0.13	0.02	0.04	0.01	0.002		
CN/Moterm	289.2	8.5	6.7	0.77	0.35	8.6	0.0	0.35	0.03	0.07	0.03	0.004	0.4	0.4	1.4	0.14	0.08	0.42	0.08	0.00	0.01	0.03	0.00	0.002	289.6	9.0	8.1	0.91	0.43	9.0	0.08	0.35	0.04	0.10	0.03	0.005		
Totals	756.4	23.5	17.9	2.05	0.92	23.7	0.0	0.95	0.09	0.19	0.08	0.010	1.7	1.6	4.7	0.47	0.27	1.64	0.27	0.01	0.04	0.13	0.01	0.006	758.0	25.2	22.6	2.51	1.19	25.3	0.27	0.96	0.14	0.32	0.09	0.016		
2025 Alt. 2: Improve/Expand																																						
Livernois-Junction	323.0	10.6	7.9	0.89	0.40	10.7	0.0	0.42	0.04	0.08	0.04	0.004	1.2	1.1	2.9	0.30	0.17	1.12	0.17	0.01	0.03	0.09	0.01	0.004	324.2	11.8	10.8	1.19	0.57	11.8	0.17	0.43	0.07	0.17	0.04	0.009		
Expressway	43.9	1.4	1.0	0.12	0.05	1.4	0.0	0.06	0.01	0.01	0.00	0.001	0.1	0.1	0.3	0.03	0.02	0.10	0.02	0.00	0.00	0.01	0.00	0.000	44.0	1.5	1.3	0.15	0.07	1.5	0.02	0.06	0.01	0.02	0.01	0.001		
CP/Oak	107.6	3.2	2.5	0.29	0.13	3.2	0.0	0.13	0.01	0.03	0.01	0.001	0.2	0.2	0.5	0.05	0.03	0.15	0.03	0.00	0.00	0.01	0.00	0.001	107.7	3.4	3.0	0.34	0.16	3.4	0.03	0.13	0.02	0.04	0.01	0.002		
CN/Moterm	289.2	8.5	6.7	0.77	0.35	8.6	0.0	0.35	0.03	0.07	0.03	0.004	0.4	0.4	1.4	0.14	0.08	0.41	0.08	0.00	0.01	0.03	0.00	0.002	289.6	9.0	8.1	0.91	0.43	9.0	0.08	0.35	0.04	0.10	0.03	0.005		
Totals	763.7	23.7	18.1	2.07	0.94	23.9	0.0	0.96	0.09	0.19	0.07	0.010	1.9	1.8	5.1	0.52	0.30	0.78	0.30	0.01	0.04	0.14	0.01	0.007	765.5	25.7	23.4	2.59	1.23	25.7	0.30	0.97	0.14	0.33	0.09	0.017		
2025 Alt. 3: Consolidate																																						
Livernois-Junction	300.0	9.9	7.3	0.82	0.37	10.0	0.0	0.39	0.04	0.07	0.03	0.004	0.8	0.7	1.9	0.19	0.11	0.74	0.11	0.01	0.02	0.06	0.00	0.003	300.8	10.6	9.3	1.02	0.48	10.7	0.11	0.40	0.06	0.14	0.04	0.007		
Expressway	43.9	1.4	1.0	0.12	0.05	1.4	0.0	0.06	0.01	0.01	0.00	0.001	0.1	0.1	0.3	0.03	0.02	0.10	0.02	0.00	0.00	0.01	0.00	0.000	44.0	1.5	1.3	0.15	0.07	1.5	0.02	0.06	0.01	0.02	0.01	0.001		
CP/Oak	107.9	3.2	2.5	0.29	0.13	3.3	0.0	0.13	0.01	0.03	0.01	0.001	0.2	0.2	0.5	0.05	0.03	0.15	0.03	0.00	0.00	0.01	0.00	0.001	108.0	3.4	3.0	0.34	0.16	3.4	0.03	0.13	0.02	0.04	0.01	0.002		
CN/Moterm	289.2	8.5	6.7	0.77	0.35	8.6	0.0	0.35	0.03	0.07	0.03	0.004	0.4	0.4	1.3	0.13	0.08	0.39	0.08	0.00	0.01	0.03	0.00	0.001	289.6	8.9	8.0	0.91	0.43	9.0	0.08	0.35	0.04	0.10	0.03	0.005		
Totals	741.0	23.0	17.5	2.00	0.90	23.3	0.0	0.93	0.09	0.18	0.07	0.010	1.5	1.4	4.0	0.40	0.24	1.38	0.24	0.01	0.03	0.11	0.01	0.005	742.4	24.4	21.6	2.42	1.14	24.6	0.24	0.94	0.13	0.30	0.09	0.015		
2025 Alt. 4: Composite																																						
Livernois-Junction	301.4	10.0	7.4	0.83	0.38	10.0	0.0	0.39	0.04	0.08	0.03	0.004	0.8	0.7	1.9	0.19	0.10	0.72	0.10	0.01	0.02	0.06	0.00	0.003	302.2	10.7	9.2	1.01	0.48	10.7	0.10	0.40	0.06	0.13	0.04	0.007		
Expressway	43.9	1.4	1.0	0.12	0.05	1.4	0.0	0.06	0.01	0.01	0.00	0.001	0.1	0.1	0.3	0.03	0.02	0.10	0.02	0.00	0.00	0.01	0.00	0.000	44.0	1.5	1.3	0.15	0.07	1.5	0.02	0.06	0.01	0.02	0.01	0.001		
CP/Oak	107.9	3.2	2.5	0.29	0.13	3.3	0.0	0.13	0.01	0.03	0.01	0.001	0.2	0.2	0.5	0.05	0.03	0.15	0.03	0.00	0.00	0.01	0.00	0.001	108.0	3.4	3.0	0.34	0.16	3.4	0.03	0.13	0.02	0.04	0.01	0.002		
CN/Moterm	289.2	8.5	6.7	0.77	0.35	8.6	0.0	0.35	0.03	0.07	0.03	0.004	0.4	0.4	1.3	0.13	0.08	0.39	0.08	0.00	0.01	0.03	0.00	0.001	289.6	8.9	8.0	0.91	0.43	9.0	0.08	0.35	0.04	0.10	0.03	0.005		
Totals	742.4	23.1	17.6	2.01	0.91	23.3	0.0	0.93	0.09	0.19	0.07	0.010	1.5	1.4	4.0	0.40	0.23	1.36	0.23	0.01	0.03	0.11	0.01	0.005	743.8	24.5	21.5	2.41	1.14	24.6	0.23	0.94	0.13	0.29	0.09	0.015		

Note: VOCs are volatile organic compounds, DPM is diesel particulate mater, BENZ is benzene, BUTA is 1,3, butadiene, FORM is formaldehyde, ACET is acetaldehyde, and ACRO is acrolein.  
Source: The Corradino Group of Michigan, Inc.



Increased intermodal activity will shift freight from truck to rail. This would reduce truck mileage and pollution. The expected reductions in Wayne County, alone, and in the seven-county SEMCOG region are presented at the bottom of Table 4-21a.

#### 4.8.6 CO Hotspot Analysis

Carbon monoxide is a colorless, odorless, poisonous gas produced by incomplete combustion. Due to the air quality maintenance status of Southeast Michigan with respect to the NAAQS for CO, a carbon monoxide hotspot analysis was performed. The analysis compared estimated worst-case CO concentrations at sensitive receptors near a dozen intersections around the terminals to the one- and eight-hour NAAQS (Table 4-23). Sensitive receptors are locations where humans might be expected to be present.

**Table 4-23**  
**Worst Case CO Concentrations**

##### One-hour

Term.	Intersection	Receptor	Ambient (ppm)	Worst-case Values (Standard is 35 ppm)				
				2004	2015		2025	
				Result	Alternative	Result	Alternative	Result
Liv-Jct	Wyoming @ Mercier	SE corner	3.8	4.5	Alt. 3	4.5	Alt. 3	4.5
Liv-Jct	Wyoming @ I-94 off ramp	NW corner	3.8	5.1	Alt. 3	5.1	Alt. 3	4.8
Liv-Jct	Lonyo @ Arnold	SW corner	3.8	5.3	Alt. 1	4.5	Alt. 2	4.5
Liv-Jct	Central @ St. Stephen	NE corner	3.8	6.0	Alt. 1	5.1	Alt. 2	5.0
Liv-Jct	Central @ Dix	NE corner	3.8	5.3	Alt. 1	4.5	Alt. 1	4.6
Liv-Jct	Livernois @ Kronk	NW corner	3.8	5.7	Alt. 3	5.2	Alt. 3	5.2
Liv-Jct	Livernois @ Lafayette	NE corner	3.8	4.6	Alt. 1	4.1	Alt. 1	4.1
Liv-Jct	Dragoon @ Lafayette	NE corner	3.8	4.6	Alt. 1	4.1	Alt. 1	4.1
Express.	Michigan @ 14th	SW corner	3.8	5.7	Alt. 4	4.9	Alt. 2	5.0
Express.	14th @ Maranette	SW corner	3.8	4.1	Alt. 4	3.7	Alt. 2	3.8
Oak	Evergreen @ I-96 Ramps	NW corner	4.0	8.7	Alt. 2	6.6	Alt. 2	6.4
Moterm	Eight Mile @ Fair Street	NW corner	4.0	5.9	Alt. 4	5.5	Alt. 2	5.4

##### Eight-hour

Term.	Intersection	Receptor	Ambient (ppm)	Worst-case Values (Standard is 9 ppm)				
				2004	2015		2025	
				Result	Alternative	Result	Alternative	Result
Liv-Jct	Wyoming @ Mercier	SE corner	2.3	2.8	Alt. 3	2.8	Alt. 3	2.8
Liv-Jct	Wyoming @ I-94 off ramp	NW corner	2.3	3.2	Alt. 3	3.2	Alt. 3	3.0
Liv-Jct	Lonyo @ Arnold	SW corner	2.3	3.3	Alt. 1	2.8	Alt. 2	2.8
Liv-Jct	Central @ St. Stephen	NE corner	2.3	3.7	Alt. 1	3.2	Alt. 2	3.1
Liv-Jct	Central @ Dix	NE corner	2.3	3.3	Alt. 1	2.8	Alt. 1	2.9
Liv-Jct	Livernois @ Kronk	NW corner	2.3	3.5	Alt. 3	3.2	Alt. 3	3.2
Liv-Jct	Livernois @ Lafayette	NE corner	2.3	2.9	Alt. 1	2.5	Alt. 1	2.5
Liv-Jct	Dragoon @ Lafayette	NE corner	2.3	2.9	Alt. 1	2.5	Alt. 1	2.5
Express.	Michigan @ 14th	SW corner	2.3	3.5	Alt. 4	3.0	Alt. 2	3.1
Express.	14th @ Maranette	SW corner	2.3	2.5	Alt. 4	2.3	Alt. 2	2.4
Oak	Evergreen @ I-96 Ramps	NW corner	2.6	5.4	Alt. 2	4.1	Alt. 2	4.0
Moterm	Eight Mile @ Fair Street	NW corner	2.6	3.7	Alt. 4	3.4	Alt. 2	3.3

Notes: 1-hr background concentrations (3.8 & 4.0 ppm) are the 2nd highest 1-hour values recorded at the Detroit Linwood (26-1630016) & Oak Park (26-125-0001) stations, respectively in 2002. The 8-hr background concentrations (2.3 & 2.6 ppm) are the 2nd highest 8-hour values recorded at these stations.

Source: The Corradino Group of Michigan, Inc.



This analysis is done with a computer program called CAL3QHC. It requires emission factors for various types of vehicles operating under various speeds and conditions (such as ambient temperature and fuel type), expressed in grams per mile. These emission factors are generated using the U.S. EPA-approved model, MOBILE6.2. Input parameters that go into the MOBILE6.2 model, such as the vehicle fleet mix and age, are drawn from SEMCOG in consultation with EPA and the Michigan Department of Environmental Quality (MDEQ). Traffic information for each alternative, along with information about roadway geometry and traffic flow conditions, are also used to determine the concentrations of CO at these sensitive receptors.

The highest one-hour and eight-hour CO concentrations are found on Evergreen Road at the CP/Oak terminal. This is true for 2004, 2015 and 2025. Estimates of one-hour CO concentrations for these years are 8.7, 6.6, and 6.4 ppm, respectively. The EPA standard is 35 ppm. Eight-hour values are 5.4, 4.1, and 4.0 ppm, respectively, compared to the standard of 9 ppm. All these values are well below standards. Conditions at all other intersections on Table 4-23 in all years under all scenarios are better.

## **4.9 Noise and Vibrations**

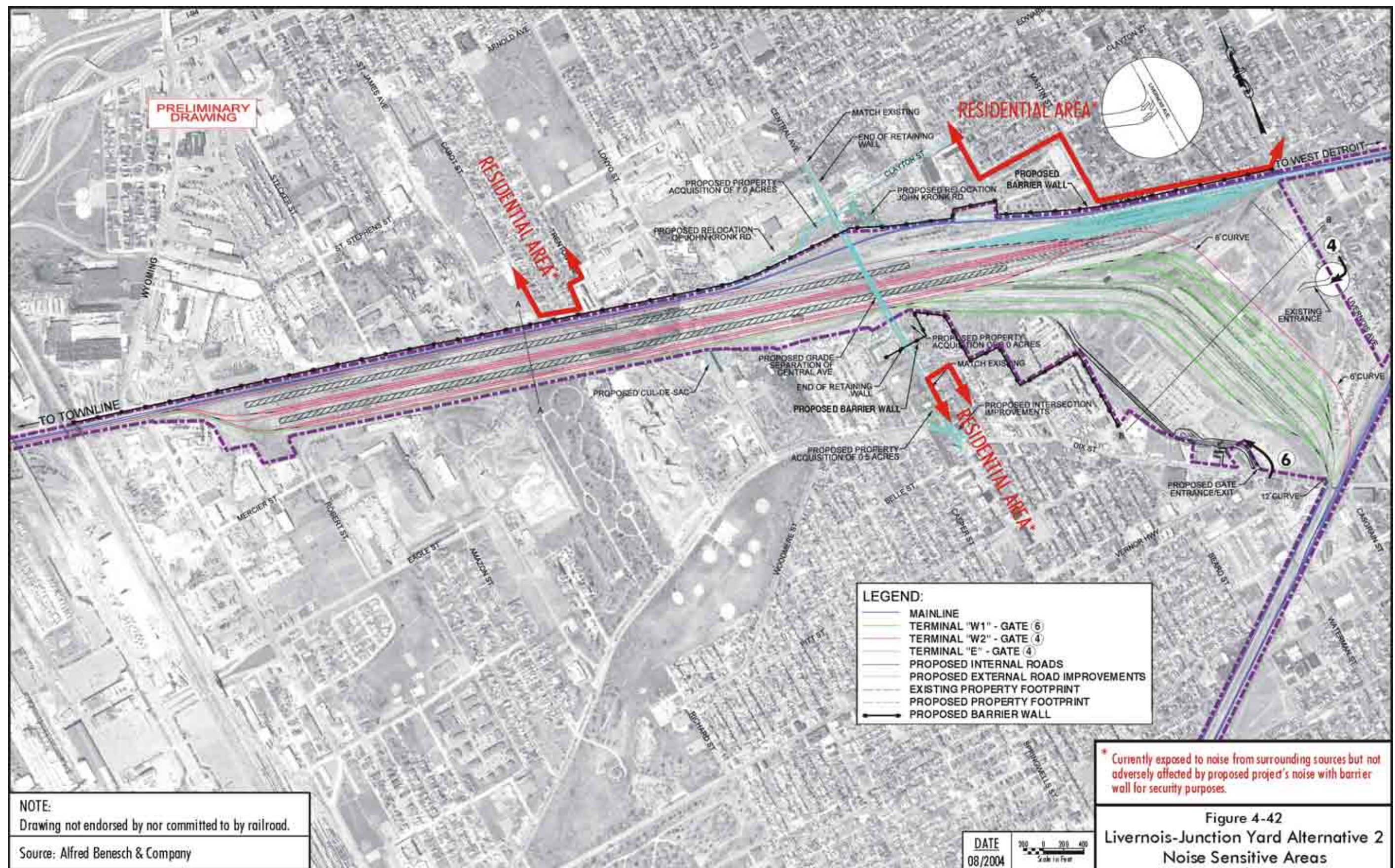
Receptors with sensitivity to noise exist adjacent to the Livernois-Junction Yard area, near the CP/Expressway and CN/Moterm terminals, and along several residential streets that experience truck traffic at these and the CP/Oak terminal (see areas indicated by red arrows on Figures 4-42 through 4-47). Analysis was performed to determine whether, with the Action Alternatives, any areas qualify for noise abatement in the loudest hour of the day. The reader is referred to the *Noise Study Technical Report* for more detail.

At the Livernois-Junction Yard, homes border the north side of John Kronk Street. At the CP/Expressway terminal, the United Community Hospital is along the north side. There are no sensitive noise receptors within 1,000 feet of the CP/Oak terminal. The residential area west of the Moterm terminal is affected by a “consent judgment” issued in 1993 that addressed disputes between the City of Ferndale and CN related to rail terminal issues. Pursuant to the judgment, a wall was constructed by CN on the west edge of the terminal. Expansion of CN/Moterm would occur south of Eight Mile Road in the State Fairgrounds. There is a residential neighborhood east of the State Fairgrounds.

Noise level changes occur where there are changes in train volumes and/or where on-street traffic volumes change. For MDOT projects, noise is evaluated on the basis of the loudest hour, as expressed in  $Leq_{(1hr)}$ , i.e., the equivalent noise level or “average” of sound over that loudest hour. Rail noise is often expressed in terms of “Ldn,” the day-night noise equivalent level. It is the “average” sound level over a 24-hour period, with a 10-dBA penalty added to noise occurring between 10:00 p.m. and 7:00 a.m. The penalty is added because of the greater sensitivity to noise during the night. Future train volumes were estimated on rail lines around each of the terminals to determine whether noise levels would increase in the loudest hour and over a 24-hour period. Likewise, changes in truck volumes serving the terminals were projected.

There are many noise sources around the terminals today associated with truck traffic and the activities conducted on the prevailing industrial land uses. A portion of the truck traffic is related to intermodal terminal activity today and would be in the future, although in the future the trucks would be directed to streets away from residential areas, unlike the condition today at all terminals. Notable non-intermodal noise sources near the Livernois-Junction Yard today are:

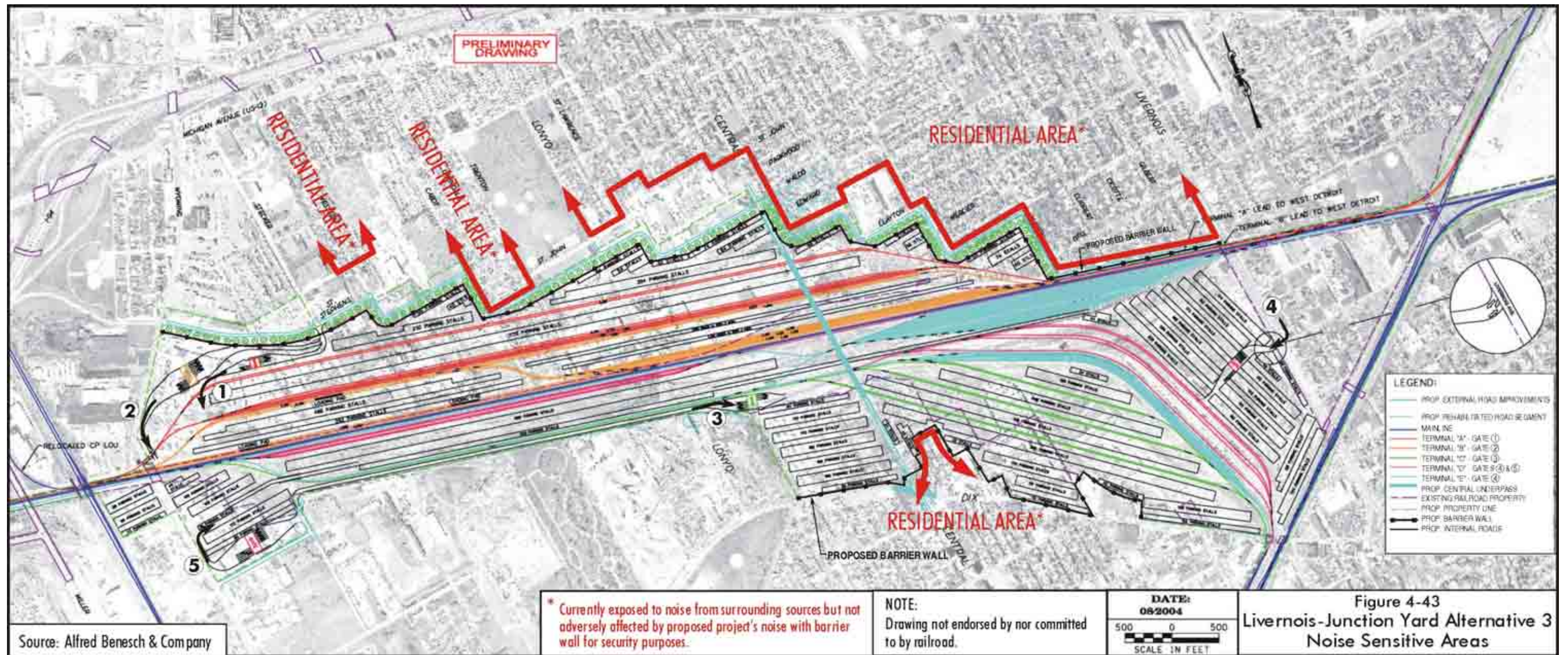














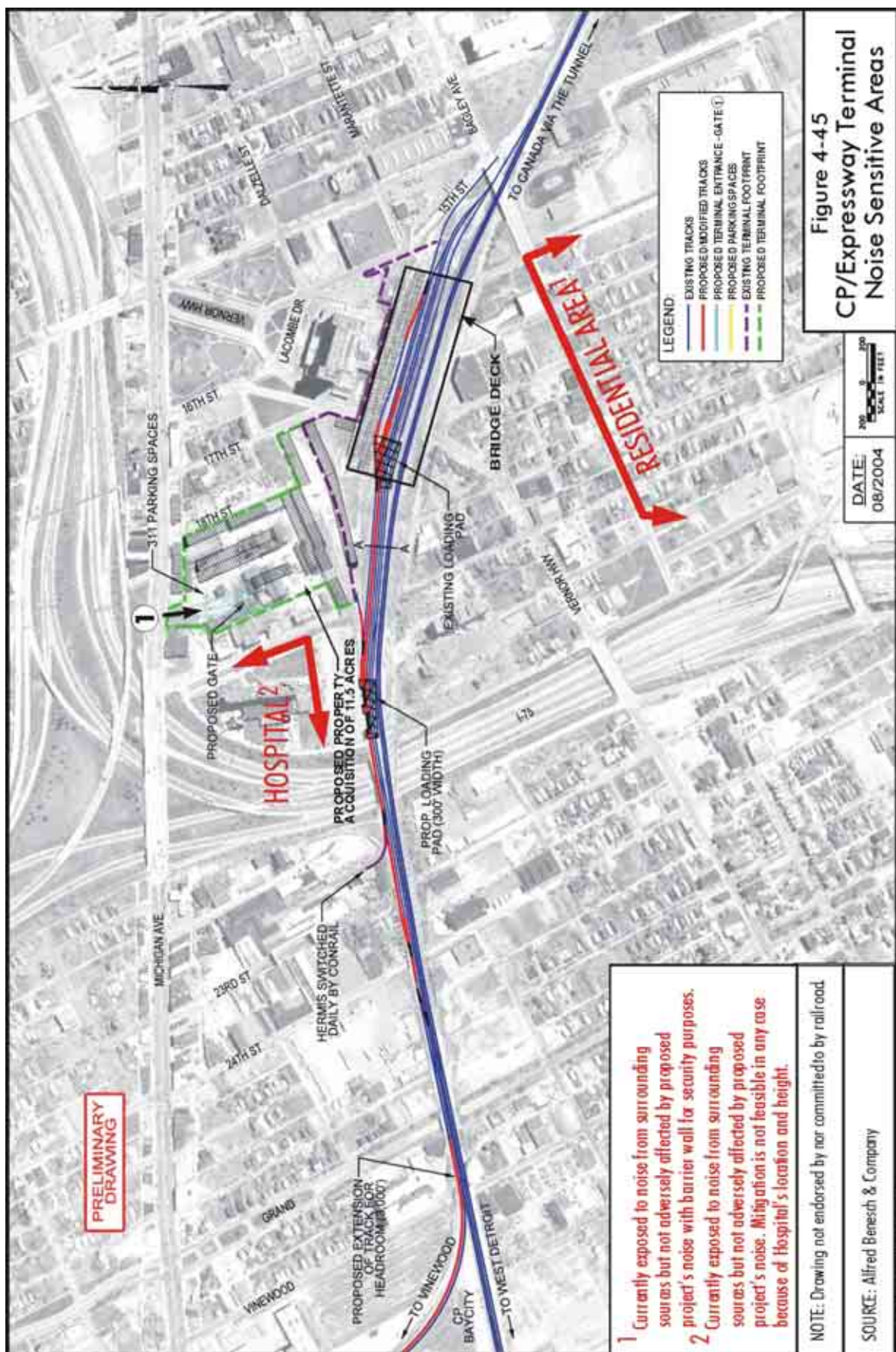




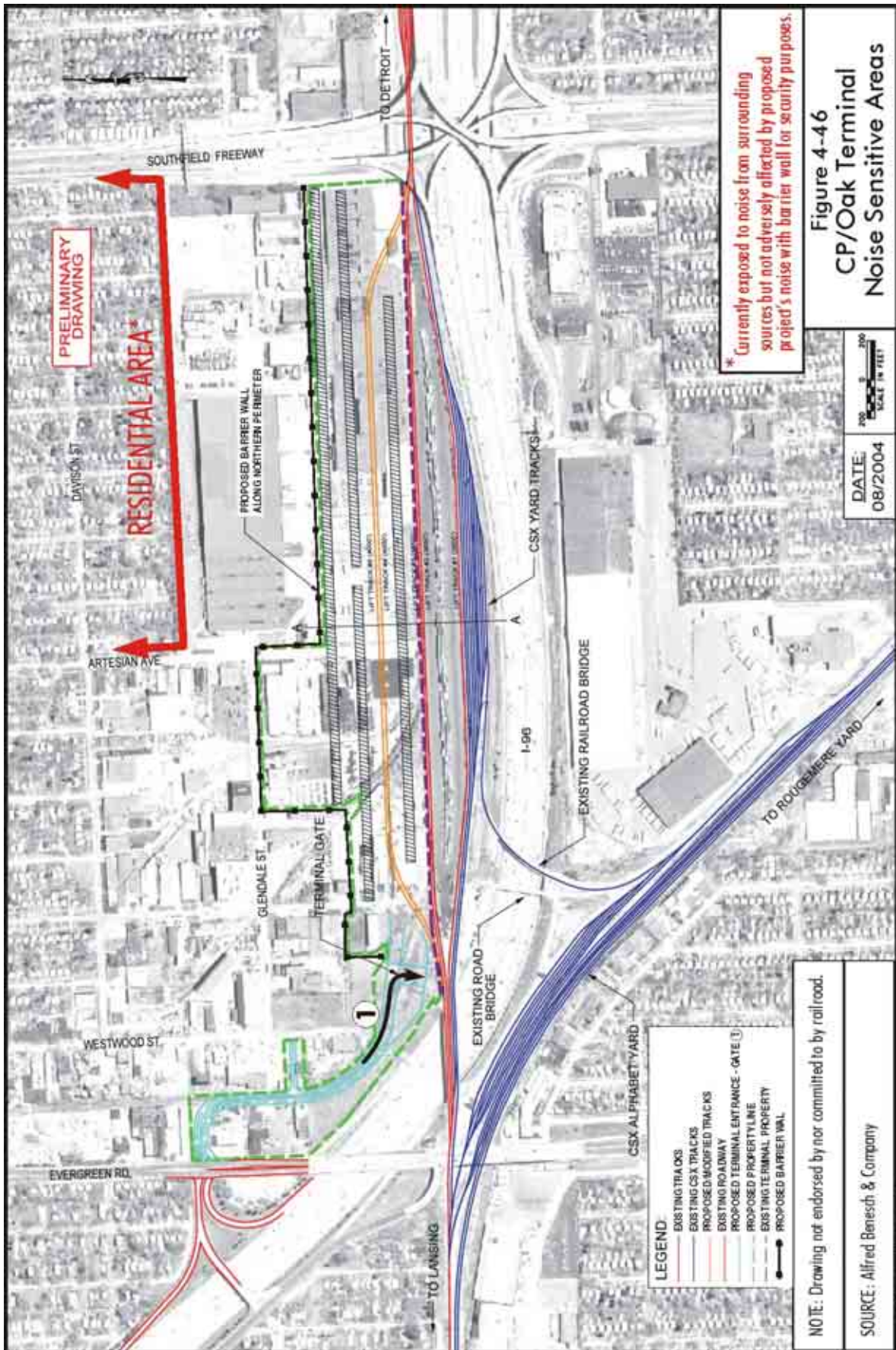


















- Conveyer belt operations of the material handling business on the south side of the Livernois-Junction Yard west of Lonyo. These activities can be heard all the way across the yard in the neighborhood to the north.
- Equipment noise from a variety of industrial/manufacturing activities along the north side of Kronk. In several areas, chain link fences and, sometimes, the width of a street are all that separate these activities from residences.
- Truck traffic on Lonyo, Central, Kronk, and Livernois/Dragon where residential properties are very close to the roadway.

At the CP/Expressway terminal, the principal noise sources are I-75, I-96, Michigan Avenue and existing rail operations on the tracks leading to the tunnel to Canada.

At the CP/Oak Yard, the principal noise sources are Evergreen Road, I-96, M-39 (the Southfield Freeway), and industrial machinery and operations north of the intermodal yard.

At the CN/Moterm terminal, the principal noise source is the yard itself, the railroad tracks north and south, and Eight Mile Road. CN Railroad operates under an agreement with the City of Ferndale that restricts the activity type by hours of operation on the yard to reduce noise effects on the neighborhood.

#### **4.9.1 Train Noise**

Train noise on rail lines around each of the terminals was estimated based on train type, speed, and throttle position.<sup>14</sup> Focusing on just those project-related, intermodal trains near sensitive areas, the number of trains is forecast to grow from four per day in 2025 under the No Action Scenario to 24 under Alternative 3. The 20-trains-a-day increase amounts to about one train every hour at the Livernois-Junction Yard area under Alternative 3 when all intermodal traffic is consolidated in one location. It is noted that the number of trains increases with lifts. But, in that growth process, trains first get longer as demand grows. Then, when the maximum number of cars per train is reached, demand is met by scheduling a new train.

The largest anticipated train volumes are related not to the proposed action covered in the EIS, but to the potential expansion of Amtrak service and initiation of commuter train operations east-west through the Livernois-Junction Yard. It has been indicated Amtrak will have an increase in operations from three to nine trains daily (equal to an increase from six to 18 passbys, as the trains operate two-way). And, seven commuter rail trains (14 passbys) are projected.<sup>15</sup> These non-project activities (i.e., Amtrak and commuter rail) will increase daily train volumes along Kronk by 32 passbys at relatively high speeds. Because the Amtrak commuter trains serve passengers, they would tend to concentrate during peak travel hours so the hourly train volumes are expected to increase by four.

Under FHWA/MDOT guidance, abatement (mitigation) must be considered when noise levels approach or exceed 67 dBA (decibels acoustic, a weighting of the noise spectrum to match human sensitivity). “Approach” is defined in Michigan as a 1-dBA reduction from the maximum of 67 dBA. So, the effective criterion for consideration of mitigation is 66 dBA during the loudest hour of the day (Table 4-24). Mitigation must also be considered if a project results in a substantial

<sup>14</sup> *Transit Noise and Vibration Impact Assessment*, Federal Transit Administration, April 1995.

<sup>15</sup> Projections in Amtrak and commuter rail operations from *Downtown Detroit to Metro Airport*, SEMCOG, 2001.

increase (10 dBA or more) in noise levels. All sites will be considered. However, it is generally known that commercial and industrial sites prefer that there be no interference with the view to their establishments. Using the criteria in Table 4-24, abatement has been considered at each sensitive location listed in Table 4-25 for each alternative.

The noise analysis was performed in terms of MDOT's Noise Policy, recognizing that the DIFT project will include special features to buffer the community from intermodal activity.

**Table 4-24**  
**FHWA Noise Abatement Criteria (NAC)**  
(Hourly A-Weighted Sound Level-decibels [dBA])

<b>Activity Category</b>	<b>Description of Activity Category</b>	<b>L<sub>eq(h)</sub></b>	<b>L<sub>10(h)</sub></b>
A	Lands on which serenity and quiet are of extraordinary significance and where the preservation of those qualities is essential, if the area is to continue to service its intended purpose.	57 (Exterior)	60 (Exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (Exterior)	70 (Exterior)
C	Developed lands, properties, or activities not included in Categories A and B above.	72 (Exterior)	75 (Exterior)
D	Undeveloped lands.	--	--
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.	52 (Interior)	55 (Interior)

Note: L<sub>eq(h)</sub> is used in this analysis.

Source: Based on Table 1 of 23 CFR 772 as found in MDOT's Noise Policy.

#### Alternative 1 – No Action

Alternative 1 would not include any mitigation, as this is the No Action condition.

- Livernois-Junction Yard - Five homes have front line exposure along the north side of Kronk between Cabot Street and Trenton Avenue and would experience noise levels in excess of the established FHWA residential criterion. Another 30 homes would experience noises levels in excess of the criterion further east on Kronk between Martin Street and Livernois Avenue (Figure 4-48).
- CP/Expressway Terminal - The sensitive receptors are the United Community Hospital inside the curve of I-75 and residences over a block away from intermodal operations. The Hospital receives noise from the intermodal area today above the criterion level and that condition would continue under Alternative 1. Noise levels from the intermodal activity are not above the criterion for the noted residential area.

**Table 4-25**  
**Trains and Noise Levels in Sensitive Areas**  
**(Note: These are not all intermodal train movements.)**

Terminal Sensitive Area	Livernois-Junction Yard					CP/Expressway Yard <sup>b</sup>					CP/Oak Yard	CN/Moterm Yard <sup>c</sup>				
	Kronk Street East of Martin <sup>a</sup>					United Community Hospital Area					None	East of Fairgrounds				
Daily Train Passbys <sup>d</sup>						Daily Train Passbys <sup>d</sup>					Daily Train Passbys <sup>d</sup>					
	Amtrak	Commuter Rail	Conventional Freight	Inter-modal	Total	Amtrak	Commuter Rail	Conventional Freight	Inter-modal	Total		Amtrak	Commuter Rail	Conventional Freight	Inter-modal	Total
2004	6	0	18	4	28	0	0	26	4	30	No receptors	6	0	4	0	10
Alt. 1 2025	18	14	22	4	58	0	0	31	4	35	No receptors	18	0	5	0	23
Alt. 2 2025	18	14	22	4	58	0	0	31	4	35	No receptors	18	0	5	8	31
Alt. 3 2025	18	14	22	20	74	0	0	31	0	31	No receptors	18	0	5	0	23
Alt. 4 2025	18	14	22	12	66	0	0	31	0	31	No receptors	18	0	5	8	31
Leq in Loudest Hour @ 100 Feet from Track <sup>e</sup> in dBA – Noise mitigation must be consistent where levels exceed 66 dBA.																
2004	71 dBA					69 dBA					No receptors	61 dBA				
Alt. 1 2025	72 dBA					70 dBA					No receptors	63 dBA				
Alt. 2 2025	72 dBA - Abatement incorporated into terminal design					70 dBA – Mitigation not feasible					No receptors	69 dBA - Abatement incorporated into terminal design				
Alt. 3 2025	74 dBA - Abatement incorporated into terminal design					69 dBA – Mitigation not feasible					No receptors	63 dBA				
Alt. 4 2025	73 dBA - Abatement incorporated into terminal design					69 dBA – Mitigation no feasible					No receptors	69 dBA - Abatement incorporated into terminal design				
Ldn for 24-hour period – Same mitigation as noted above																
2004	73 dBA					72 dBA					No receptors	63 dBA				
Alt. 1 2025	74 dBA					73 dBA					No receptors	65 dBA				
Alt. 2 2025	74 dBA					73 dBA					No receptors	71 dBA				
Alt. 3 2025	77 dBA					71 dBA					No receptors	65 dBA				
Alt. 4 2025	76 dBA					71 dBA					No receptors	72 dBA				

<sup>a</sup> This noise sensitive area is at the east end of the Livernois-Junction Yard. Most intermodal trains would not operate in that area.

<sup>b</sup> CP/Expressway intermodal trains come in from Canada and return to Canada via the rail tunnel under the Detroit River and do not progress any further into the U.S.

<sup>c</sup> CN intermodal trains come and go from the north and so do not penetrate as far as the Fairgrounds and the residential area to the east today. They would in the future under Alternatives 2 and 4.

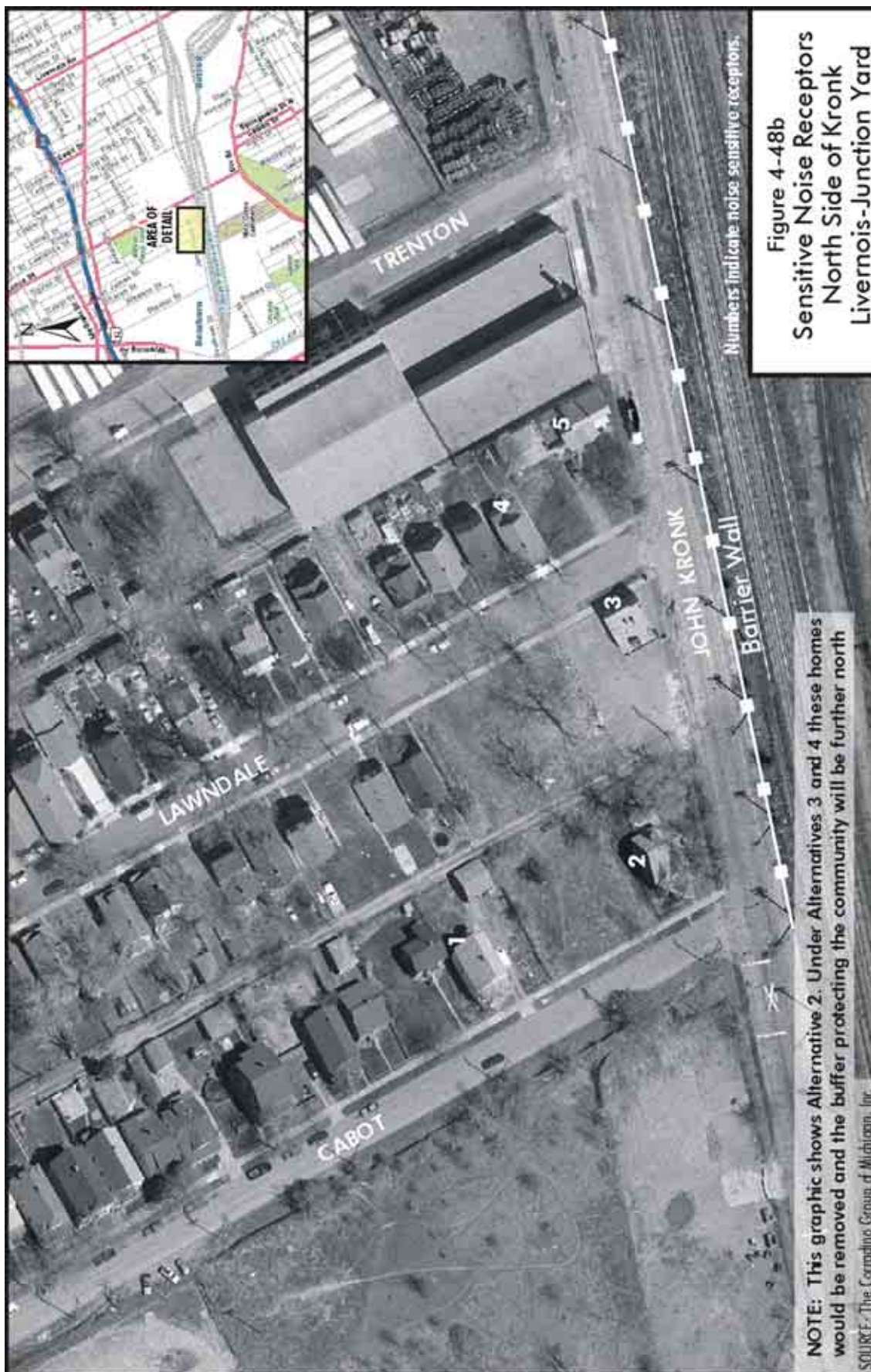
<sup>d</sup> Some trains operate one way through the yard. Others pull in, then back out. For noise purposes the latter is counted as two passbys. Daily trains are listed for purposes of understanding, but the Leq noise calculation is done for the loudest hour.

<sup>e</sup> Leq shown is as estimated for a reference distance of 100 feet. These values are adjusted to determine whether more distant sensitive receptors are exposed to noise levels of 66 dBA or more.

Source: The Corradino Group of Michigan, Inc.









- CP/Oak Terminal - Residences are over 1000 feet away to the north and do not experience noise levels from the rail terminal in excess of criteria. This would not change under the No Action Alternative.
- CN/Moterm Terminal - A residential neighborhood east of the State Fairgrounds would be exposed to additional train noise under No Action conditions but not at the 66-dBA level (Figure 4-49).

#### Alternative 2 – Improve/Expand Existing Terminals

Alternative 2 would expand existing terminals. Current exceedances of the noise abatement criterion at the two locations along Kronk at the Livernois-Junction Yard would continue. In the neighborhood east of the State Fairgrounds at the expanded CN/Moterm terminal the noise criterion would be exceeded for the first time. All these locations would be shielded by barrier walls for security that would be designed to mitigate noise a minimum of five decibels, to a point below the residential criterion. These walls are considered part of the alternative's design, notwithstanding the "reasonability" criteria specified in Michigan's Noise Policy. Each terminal is discussed below.

- Livernois-Junction Yard – In the Cabot Street and Trenton Avenue area the fact that there are only five homes with front line noise exposure means that it is not possible to build a noise wall that is "reasonable" per Michigan's Noise Policy. A noise wall has to extend beyond the limits of the residences for some distance in each direction to afford noise abatement. But, as noted, the DIFT has included a barrier wall in its design around the yard for security purposes, so a wall would be constructed at this location as part of the project and is not subject to the normal "reasonable" test as it serves security and buffering functions.

Along the north side of Kronk, between Martin Street and Livernois Avenue, more than 20 homes have front-line exposure to noise from the Livernois-Junction Yard and almost 40 would have line-of-sight exposure to the rail activity. These single-family homes would experience at least a five-decibel decrease in noise levels with a wall 12 feet high that is part of the terminal's design (Figure 4-48). The wall would be positioned between the edge of the rail yard and John Kronk. If this section of the barrier wall that affords noise abatement to this residential area were evaluated with respect to Michigan's Noise Policy, it would be considered reasonable because the cost per dwelling unit is estimated to be \$22,400, compared to the criterion \$34,772 (2004 dollars).

- CP/Expressway Terminal – Alternative 2 calls for terminal expansion east of I-75 and south of Michigan Avenue. The United Community Hospital is located inside the curve of I-75. Noise mitigation is not feasible at this location because the hospital is multi-story and immediately adjacent to I-75 and Michigan Avenue both of which contribute noise to the hospital site greater than the expected intermodal rail noise. The residential area, more than a block south of the terminal, will not be adversely affected by noise levels from intermodal activity.
- CP/Oak Terminal – Alternative 2 calls for intermodal terminal expansion to the north. There are no sensitive receptors within 1000 feet of the terminal. Nevertheless, a barrier wall will be created along the northern edge of the property for security purposes, if the terminal were expanded.



- CN/Moterm Terminal – Alternative 2 calls for terminal expansion in the east section of the Michigan State Fairgrounds. Across the railroad tracks to the east of the Fairgrounds, seventeen homes along Fayette Street have direct exposure to the existing rail line and its associated activity. (Note that no intermodal trains operate today in the Fayette Street area as the trains pull into the Moterm terminal from the north and exit to the north.) The increase in train activity with intermodal expansion into the Fairgrounds would be two trains a day over No Action conditions with one train in the loudest hour. Due to the low level of existing train activity along this track section, the intermodal trains would increase the overall noise level to the point that the residential noise criterion would be exceeded. The cost of a wall that is 1,600 feet long at this location is estimated to be \$900,000 or \$56,000 per dwelling unit. This does not meet the Noise Policy criterion. However, as with other locations, a barrier wall is included in the project's design for security purposes, if the terminal were expanded (refer to Figure 4-49). The wall would be built as described above so that the noise criterion is no longer exceeded.

Alternative 2 will reduce rail noise except for one location where horn blowing will increase. Horn blowing at rail crossings of roads is generally considered to be the most intrusive noise. Trains serving the CN/Moterm terminal presently use their horns in the area of Nine Mile Road and Hilton Road. There, intermodal trains will increase from one to four movements daily (as total trains increase from 11 to 27), if the CN/Moterm terminal were expanded (Alternatives 2 and 4).

On the other hand, at the Livernois-Junction Yard horn use will cease. Trains use their horns at Lonyo Avenue and Central Avenue today. There will be no need for horn use there under any of the Action Alternatives (Alternatives 2, 3, and 4) as Lonyo would be closed and Central would be reconstructed to pass under the rail yard.

Alternative 3 would expand the Livernois-Junction Yard area. There would be increased intermodal traffic, but property acquisition in the area would remove a number of homes, and a barrier wall is planned along the north side of the expanded rail yard for security purposes. It will also serve to protect from noise the remaining homes in the Cabot/Trenton area and the Martin/Livernois area. If this section of the barrier wall that affords noise abatement to the Martin to Livernois Avenue residential area was evaluated with respect to Michigan's Noise Policy, it would qualify for noise mitigation funding. Horn blowing at Lonyo and Central Avenues would cease.

Alternative 4 would likewise have impacts that would be mitigated along east Kronk, plus impacts to the area east of Fairgrounds, as noted in Alternative 2. Horn blowing at Lonyo and Central Avenues would cease.

#### **4.9.2 Roadway Noise**

As a rule, doubling the energy of sound (twice as much traffic, half as much distance) results in about a 3 dBA sound level increase, a level undetectable by most people unless they are in a controlled laboratory setting. Thus, noticeable noise impacts typically result only when the road is moved much closer to sensitive receptors.

Under the No Action Alternative (Alternative 1) background traffic was assumed to grow at one percent a year and there would be no mitigation. Under all Action Alternatives, roadway noise would not increase perceptibly (no more than 3 dBA). The DIFT project will focus new truck traffic along designated travel paths, notably on Wyoming Avenue and Livernois Avenue and away from sensitive receptors.

The DIFT traffic analysis determined the existing auto and truck volumes on the local street networks around each of the terminals. Then, new traffic related to the DIFT project under each alternative was added, based on proposed terminal gate locations and access routings. Traffic related to properties that would be acquired for the project was removed from the network. The net volume change on each roadway link was then estimated for each alternative. The change in auto and truck traffic allowed an estimate of the change in noise level.

Perceptible noise level reductions are expected at several residential locations, resulting from reduced truck traffic (Figure 4-50), most notably:

- Livernois-Junction Yard – Livernois Avenue and Dragoon Street south of Dix to I-75 (Alternatives 3 and 4).
- CP/Oak Terminal (Alternatives 2, 3 and 4) – Artesian Street.
- CN/Moterm Terminal (Alternatives 2, 3, and 4) – Fair Street and Chesterfield Street north of Eight Mile Road.

#### **4.9.3 Vibrations**

Detectable vibrations are normal where trains and trucks are active. During the feasibility study for the DIFT project, vibration levels were measured at four locations in the vicinity of the Livernois-Junction Yard (Figure 4-51): 1) Beard Elementary School at 1551 Beard Street (along the rail line from the east yard area to the Springwells/I-75 area); 2) the Bill Ford Family Services and Learning Center, 3401 Schaefer Road; 3) a vacant lot on Porath Court near Wyoming Avenue (next to the I-94 off-ramp); and, 4) a vacant lot at 3321 Clippert Street at John Kronk, approximately three blocks west of Livernois and north of John Kronk (Figure 4-51). At the first location train passbys were measured, at the second trucks, at the third trucks, and at the fourth trucks and trains. Although the measurements detected vibration levels perceptible to humans, the annoyance level<sup>16</sup> was reached only at the Beard School. However, vibrations at annoyance levels were noted at the school in the absence of trains as well as when a locomotive passes by. It is expected there will be 12 more intermodal train passbys per day, maximum, in 2025 between No Action and the busiest Action Alternative. Today there are about 15 passby trains during the school day. This increase relating to intermodal growth would amount to less than one additional locomotive passby per hour during the school day in 2025 based on the data in Table 4-25.

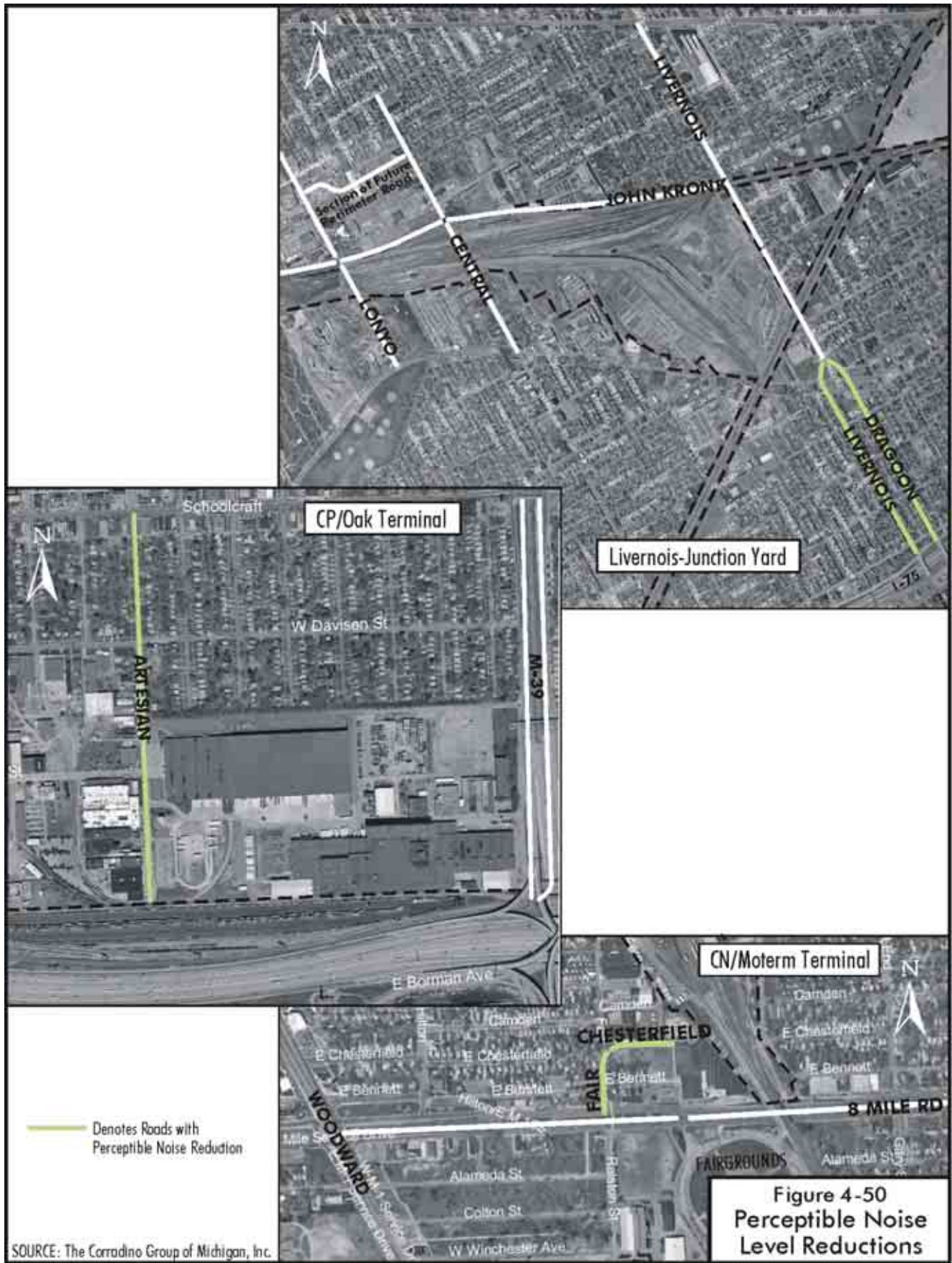
The above vibration measurement locations represent “worst case” conditions for all locations under any alternative. No vibration mitigation is proposed for any Action Alternative.

At the CP/Expressway, CP/Oak and CN/Moterm terminals, train and truck passbys occur in a manner similar to the Livernois-Junction Yard, except that they are less frequent. At all sites there are multiple sources of vibration from non-intermodal truck or rail traffic, such as industrial processes, heating and air conditioning units, transformers, and a variety of other indoor and outdoor sources. The vibrations due to intermodal activity are detectable but not intrusive in these environments.

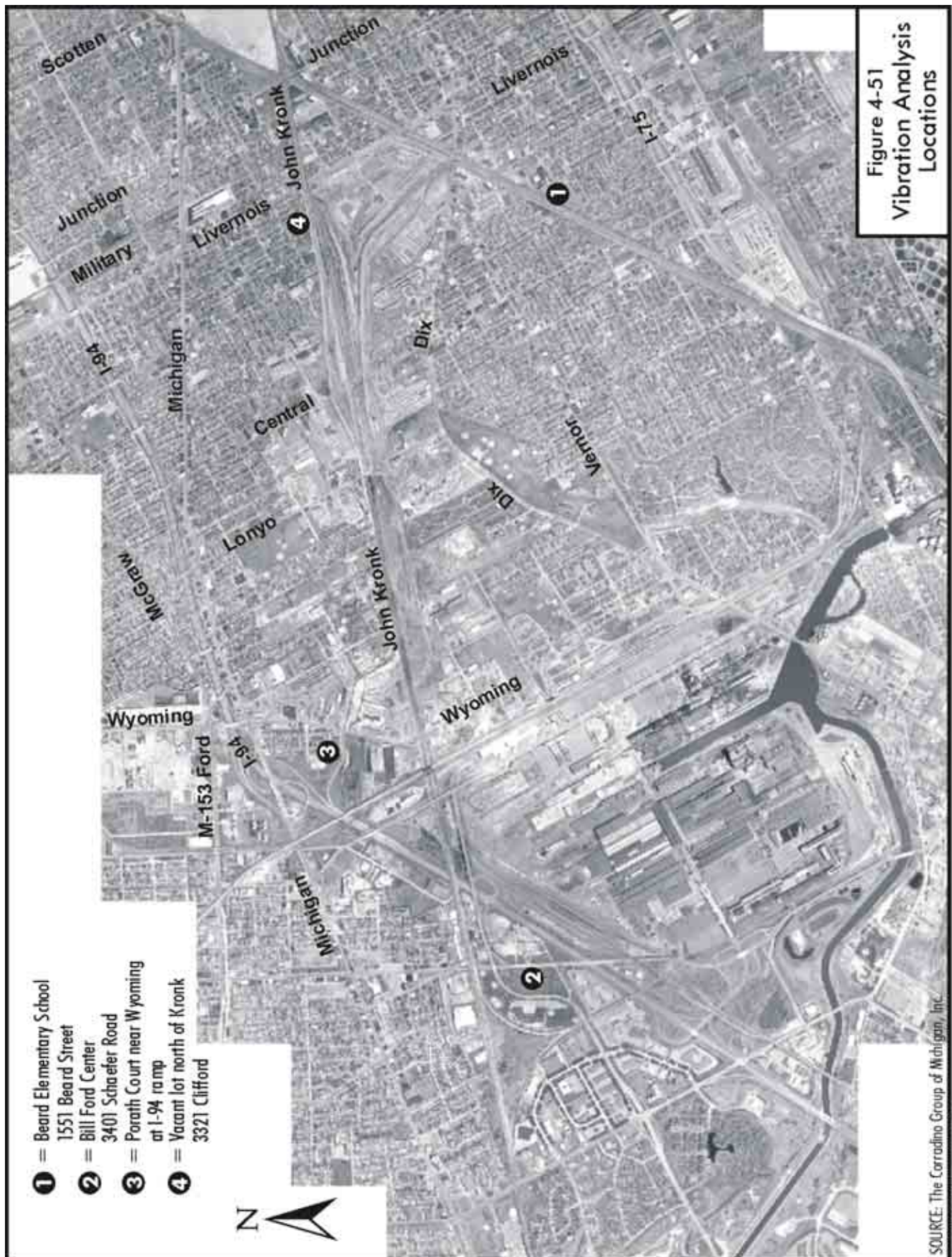
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<sup>16</sup> The “Annoyance Level” is based on a rating curve which is four times higher than the base human perception rating curve consistent with procedures of the American National Standard Institute (ANSI) S3.29-1983, reaffirmed in 1996.









## **4.10 Threatened and Endangered Species**

Threatened and endangered species are officially protected in Michigan by both federal and state Endangered Species Acts: Public Act 451, Part 365 and Act 203 of the Public Acts of 1974, respectively. An endangered species (E) under the acts is defined as in danger of extinction throughout all or a significant portion of its range. A threatened species (T) under the acts is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Special concern species (SC) are not afforded legal protection under the acts. They are species with declining or relict populations in Michigan or are species for which more information is needed.

There will be no effect on threatened and endangered species at any of the terminals under any Action Alternative. According to the MDNR, Wildlife Division: a) at the Livernois-Junction Yard area, there are no known occurrences of federal- or state-listed endangered, threatened, or otherwise significant species, natural plant communities, or natural features (see letter dated September 13, 2002, Appendix A, Section 2); and, b) at the CP/Expressway, CP/Oak and CN/Moterm areas, the project should have no impact on rare or natural features (see letter dated September 19, 2003, Appendix A, Section 2).

## **4.11 Waterways/Water Quality/Floodplains**

### **4.11.1 Waterways**

No waterways or waterbodies including lakes, ponds, perennial streams, and intermittent streams would be affected by any alternative.

### **4.11.2 Water Quality**

All of the Action Alternatives will have minimal to no impacts on the quality of surface or groundwater, or the level of the groundwater table. There are no floodplains at any of the sites. No physical disturbance of stream and riparian vegetation will occur, as there is no open water or waterway at any of the sites. All of the sites are located in developed urban areas. In the future, surface runoff from all of the sites will continue to flow to the combined sewer system. Because the unpaved portions of existing terminals would remain unpaved under Alternative 1 – No Action, the amount of runoff for Alternatives 2, 3 and 4 would be greater than Alternative 1. That terminal runoff (including that for newly paved surfaces) will be directed to an engineered on-site collection system first, using oversized pipes and swales to ensure future flow rates are not increased. Because of the combined sewer system, all water will be treated before it outfalls to the Detroit River.

The railroads, like many other industries, are required by the federal government to have pollution prevention plans to prevent impacts to stormwater, surface water and groundwater. These plans include, among other things, provisions requiring spill prevention, response, training and reporting.

Groundwater is present in the glacial drift and underlying sedimentary bedrock formations. The regional geology consists of surficial lacustrine clay and silt deposits underlain by limestone, shale and sandstone beds of Ordovician to Pennsylvania age. The glacial drift in Wayne County ranges from a few feet to as much as 330 feet. These deposits are thinnest near the mouth of the

Detroit River and thicken toward the west and northwest. Most of Detroit sits on an ancient glacial, clay plain lake bed and salt mines.

The quality of groundwater is highly mineralized. There are no known potable water wells, including public water supply wells in the vicinities of the terminals. The water supply for Detroit is Lake Erie. None of the terminals are located in wellhead protection areas.

Because of the underlying clays and the proposed stormwater collection/storage system, infiltration to groundwater is expected to be insignificant for any Action Alternative.

#### **4.11.3 Floodways and Floodplains**

Floodplain analysis must be performed consistent with 23 CFR 650 and Executive Order 11998. The analysis must examine whether a project creates or increases a hazard to people and/or property, and whether there is an impact on natural and beneficial floodplain values. These values include: fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

There are no waterways (streams/drains) in the areas of the Action Alternatives. The areas are on combined sanitary/storm sewers.

There will be no encroachment on any regulatory floodway (the main channel that carries water) or floodplain (the area into which water extends during periods of flooding) in any alternative. No significant hazard to people or property will result from the project. There will be no floodway fringe (i.e., 100-year floodplain) affected. The Action Alternatives will not result in a loss in natural and beneficial floodplain values.

#### **4.12 Wetlands**

Fieldwork to identify wetlands was performed consistent with state and federal guidance at the intermodal terminals in the spring of 2002, and the spring and summer of 2003 and summer of 2004. State and federal laws and regulations (Federal Executive Order 11990 and Part 303 of Michigan Public Act 451 of 1994) protect wetlands and require that: 1) they be avoided to the extent feasible and prudent; 2) if unavoidable, impacts be minimized; and, 3) mitigation be provided in the form of wetland replacement, generally as close as possible to, and in the same watershed as, the impact area.

The US Geologic Service (USGS) topographic maps of the sites revealed flat topography substantially altered by industrial and commercial development. Site visits confirmed that there is no undeveloped land on any of the parcels. Vegetated surfaces are mainly road medians, lawns, and parks. The National Wetland Inventory (NWI) maps of the sites indicated that no wetlands occurred on or adjacent to any site. The *Soil Survey of Wayne County, Michigan* is not a complete survey of all areas of Wayne County. The National Resource Conservation Service (NRCS) did not map areas that had been fully developed prior to the time the original survey was conducted. The areas were not surveyed and not included in the mapped soil units for this section of Detroit because the areas have been urbanized for several decades, with considerable disturbance to natural soils.

#### **4.12.1 Alternative 1: No Action**

Under the No Action Alternative there would be no effect on wetlands.

#### **4.12.2 Alternative 2: Improve/Expand Existing Terminals**

##### **Livernois-Junction Yard**

One wetland (Palustrine Emergent) was identified within the area of investigation. This area is located in the southeast corner of a railroad overpass crossing Central Avenue. It is approximately 20 x 20 feet (400 square feet or less than 0.01 acre) and predominantly consists of willow (*Salix* spp.) and common reed (*Phragmites australis*). Wetland hydrology was evidenced by water seeping out of the coarse gravel railroad ballast and fill that forms the foundation of the overpass on the east side of Central Avenue. This water apparently seeps down from the railroad and collects in a flat area next to a used auto parts business. The drainage pattern appears to direct water from the flat wetland area to the sidewalk on the east side of Central Avenue and north to the lowest point of the street under the viaduct.

This small area is located in a highly urbanized setting, next to a busy street and wedged between the railroad track and the salvage yard. Because it is flat, it appears to have minimal stormwater storage capacity. Because it is next to an auto salvage yard, its function as a filter is questionable as wetland drainage water may well take up chemicals seeping from the salvage yard prior to overflowing onto the sidewalk and draining into the street. The patch is quite small so that its wildlife value is judged non-existent. The plant species (common reed [*Phragmites australis*] and willow [*Salix* spp.]) are not particularly useful to wildlife as food sources and they are not thick enough to provide much cover. In summary, this is a very small, marginal wetland of minor environmental significance. MDOT, through a cooperative agreement with MDEQ, will build or restore compensatory mitigation for unavoidable wetland impacts using a “Moment of Opportunity” site allowed under the General Permit Category of Part 303 of P.A. 451 (1994, as amended).

##### **CP/Expressway Terminal**

Field investigation revealed no wetlands in this highly urbanized area. Minor vegetated surfaces consisted of turfgrass (*Poa* spp.) with assorted weed species such as common plantain (*Plantago major*), and dandelion (*Taraxacum officinale*). A small patch of giant reed (*Phragmites australis*) was found growing out of a crack where the vertical wall of a viaduct intersects with street pavement on the northeast side of the 20<sup>th</sup> Street viaduct. This area apparently receives water draining from the railroad ballast on top of the viaduct, down to the crack along the street where it temporarily pools around a pile of discarded tires stacked against a chain-link fence. This area, approximately ten square feet in total area, is not considered a wetland.

##### **CP/Oak Terminal**

Examination of the site aerial photograph indicated one area that might be capable of supporting wetlands, an abandoned field located in the northeast corner of the I-96/Evergreen Road interchange. Field investigation revealed no wetlands in this area, only old-field vegetation and some small elm (*Ulmus americana*) and box elder (*Acer negundo*) trees. Notable wildlife observed during the site visit included two American woodcocks, several eastern cottontail rabbits, and a Ring-neck pheasant. Field investigation also revealed some vegetation in a low



area of 200-300 sq. ft. extent alongside the ballast of an abandoned railroad spur in this area. But the soils and hydrology in this area do not support determination that it is a wetland.

#### **CN/Moterm Terminal**

At the south end of the Fairgrounds near the railroad tracks is a 3,200-square-foot (0.07-acre) low quality Palustrine Emergent wetland created by earth stockpiling. It supports 13 wetland plant species. The area contains piles of soil, concrete and asphalt. This site, like the site at the Livernois-Junction Yard, would also be mitigated through the “Moment of Opportunity” process.

#### **4.12.3 Alternative 3: Consolidate All Four Class I Railroads’ Intermodal Activity at Livernois-Junction Yard Area**

The conditions of Alternative 2 for the Livernois-Junction Yard, presented above, apply here.

#### **4.12.4 Alternative 4: The Composite Option**

The conditions of Alternative 2 for the Livernois-Junction Yard and the CN/Moterm terminal, presented above, apply here.

### **4.13 Historic and Archaeological Resources**

The *National Register of Historic Places* has established criteria for determining historic significance. These criteria require a property to have integrity of location, design, setting, materials, workmanship, feeling, and association. Additionally, the property typically has to be 50 years old or older, and meet one of the following: Criterion A) be associated with a significant event; Criterion B) be associated with the lives of significant persons; Criterion C) embody the distinctive characteristics of a type, period or method of construction, or represent the work of a master; or, Criterion D) have yielded or may be likely to yield information important in history or prehistory (usually archaeological sites).

To satisfy Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation Act, MDOT contacted the Michigan State Historic Preservation Office (SHPO) for help in identifying project area historic and archaeological sites. The SHPO recommended that MDOT conduct historic and archaeological surveys to locate sites eligible for listing on the *National Register of Historic Places*. The FHWA and MDOT began cultural resource surveys by delineating an Area of Potential Effect (APE) for the project. The APE represents the maximum area potentially affected, both directly and indirectly, by the project and is approved at the outset of the analysis by the State Historic Preservation Office (SHPO). The SHPO agreed the APE would extend 300 feet beyond the existing rail yards and the proposed expansions for aboveground resources.

Surveys of historic and archaeological resources took place within the APE in 2002, 2003 and 2004. The survey results, project impacts, and mitigation measures are described in separate reports.<sup>17</sup>

Each of the Action Alternatives would have an “adverse effect” on cultural resources. In making this determination, the criteria of adverse effect, as listed in Section 106 of the National Historic Preservation Act were applied. A project results in an adverse effect on an historic property when it diminishes those characteristics that make it historically significant. Activities that may result in an adverse effect include demolition, landscape changes, isolation of a property from its setting, and the introduction of visual, audible or atmospheric elements out of keeping with the character of the property.

Adverse effects on historic resources are avoided when prudent and feasible. When it is not prudent and feasible to avoid adverse effects, they are minimized. Because the Action Alternatives would adversely affect an historic property, mitigation measures must be developed should any of these alternatives be advanced after the public hearing. These measures are to be developed in consultation with the SHPO, the community, and the Advisory Council on Historic Preservation in Washington, D.C. That information is presented in Section 6 of this document, which covers impacts to Section 4(f) properties.

Research and field review found no known National Register eligible archaeological resources at any intermodal terminal for any alternative. However, the SHPO has agreed with the assessment that field investigations at two archaeological sites at the Livernois-Junction Yard should be conducted to determine whether archaeological deposits exist prior to any construction (see letter dated November 22, 2004 in Appendix A, Section 2).

#### **4.13.1 Alternative 1: No Action**

Under the No Action Alternative, there would be no government-sponsored effect on any above-ground historical resources or on any archaeological resources.

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<sup>17</sup> “Archaeological Literature Search and Field Review of the Detroit Intermodal Freight Terminal (DIFT) Project Detroit and Dearborn, Michigan”, Commonwealth Cultural Resources Group, November 2002; “Assessment of Archaeological Sensitivity for the Proposed CP/Oak - Detroit Intermodal Freight Terminal City of Detroit, Wayne County, Michigan”, Commonwealth Cultural Resources Group, April 2003; “Above-ground Resources Assessment for the Proposed CP/Oak - Detroit Intermodal Freight Terminal City of Detroit, Wayne County, Michigan”, Commonwealth Cultural Resources Group, May 2003; “Assessment of Archaeological Sensitivity for the Proposed CP/Expressway - Detroit Intermodal Freight Terminal City of Detroit, Wayne County, Michigan”, Commonwealth Cultural Resources Group, June 2003; “Above-ground Resources Assessment for the Proposed CP/Expressway - Detroit Intermodal Freight Terminal City of Detroit, Wayne County, Michigan”, Commonwealth Cultural Resources Group, June 2003; “Assessment of Archaeological Sensitivity for the Proposed CN/Moterm - Detroit Intermodal Freight Terminal City of Ferndale, Oakland County, Michigan”, Commonwealth Cultural Resources Group, August 2003; “Assessment of Archaeological Sensitivity for the Proposed CSX Livernois - Detroit Intermodal Freight Terminal Cities of Detroit and Dearborn, Wayne County, Michigan”, Commonwealth Cultural Resources Group, September 2003; “Above-ground Resources Survey of the Michigan State Fair Property - Detroit Intermodal Freight Terminal Project City of Detroit, Wayne County, Michigan”, Commonwealth Cultural Resources Group, February 2004; “Above-ground Resources Assessment for the Proposed CSX-Livernois-Detroit Intermodal Freight Terminal Cities of Detroit and Dearborn, Michigan,” Commonwealth Cultural Resources Group, May 2004.

#### **4.13.2 Alternative 2: Improve/Expand Existing Terminals**

##### **Livernois-Junction Yard**

Implementation of Alternative 2 at the Livernois-Junction Yard will not have an adverse effect upon National Register-eligible or listed above ground resources.

An archaeological survey was performed. The impact of urban and industrial development over the past century has fundamentally reduced the potential for archaeological site survival. This is especially evident in the destruction of the natural drainageways that previously laced the project area. Cut-and-fill operations along the creek margins, combined with the opening of brickyard clay pits, have had a catastrophic impact on the integrity and continued survival of any archaeological sites associated with the DIFT project expansion/acquisition parcels. Nevertheless, two potential sites will undergo further investigation prior to any construction if Alternative 3 is determined to be the preferred alternative.

##### **CP/Expressway Terminal**

A reconnaissance-level survey of the APE found one structure, one building, and one district that are recommended eligible for the National Register (Table 4-26 and Figure 4-52). One of these three that would be adversely affected by Alternative 2 is discussed next. The State Historic Preservation Office (SHPO) has concurred with the eligibility and effect determinations for the CP/Expressway terminal (see letter in Appendix A, Section 2 dated October 18, 2004).

The Michigan Central Railroad (MCRR) passenger station and bridge-deck structure spanning West Vernor Highway is recommended eligible as a contributing element of the NRHP-listed Michigan Central Railroad Station. Its potential for NRHP nomination, either individually or as an element of the NRHP-listed passenger station, relates directly to its unique character as a marker in the early evolution of monolithic reinforced concrete bridge/deck design specific to the ca. 1905-1915 period. Its eligibility would be based on the structure's significance in engineering design (i.e., Criterion C). Under Alternative 2, proposed/modified tracks would be constructed on the bridge deck structure causing an adverse effect. Hence, a Memorandum of Agreement (MOA) will be necessary and will be included in the FEIS, if Alternative 2 becomes the preferred alternative. It will stipulate conditions that mitigate impacts to the property adversely affected. Section 6 of this DEIS provides a Draft Section 4(f) Evaluation of the property that would experience an adverse effect and that would be covered in the MOA.

The two other properties eligible for the National Register but not affected by Alternative 2 are discussed next.

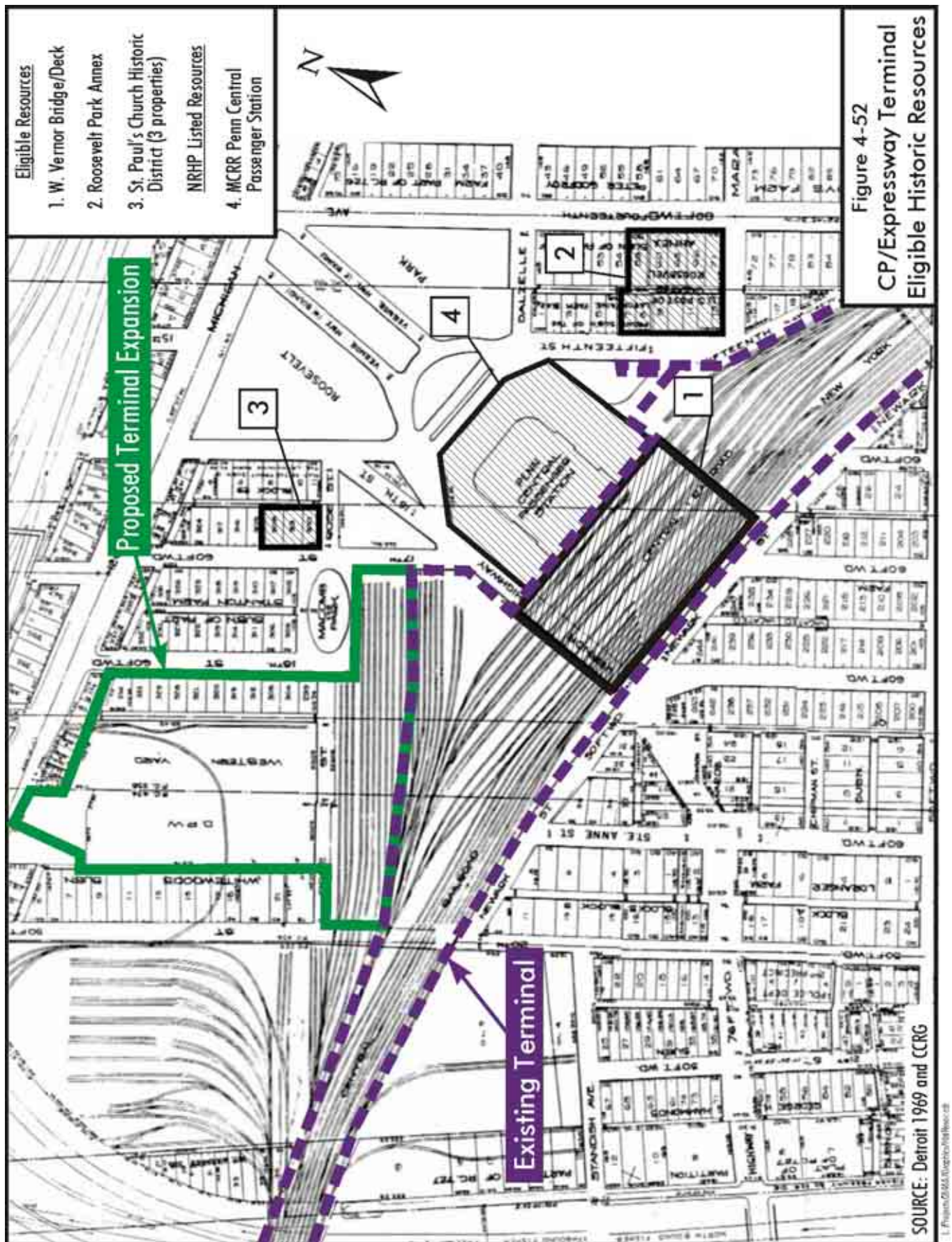
The former U.S. Post Office Roosevelt Park Annex is recommended eligible for listing on the NRHP as an individual resource. Built in 1935 as a PWA-financed project by the noted Detroit-based architectural firm of Albert Kahn, Inc., it stands among the few of the later non-industrial buildings of Kahn design. It is eligible as it is the product of a recognized master architect and embodies a distinctive type of public architecture (PWA Moderne) by incorporating elements of Craftsman/Art Deco composition in its brickwork facades, along with the streamline form of Art Moderne bracketing on the building's main entry (i.e., Criterion C). No property will be taken from this site and project implementation will not represent an adverse effect.

**Table 4-26**  
**Summary of Project Effects on Potential**  
**National Register Eligible Cultural Resources**

Alt.	Terminal	ID No. on Figure 1-16	Site Name	Location	Description	Effect
2	CP/ Expressway	1	Michigan Central Railroad Passenger Station and Bridge Deck	West Vernor Highway	Railroad station and bridge decks, circa 1905-1915	Proposed/modified tracks on bridge deck. Adverse effect.
2	CP/ Expressway	2	Roosevelt Park Annex	Maranette St. and 14 <sup>th</sup> St.	Post Office PWA Moderne, circa 1935	No property to be taken. No adverse effect.
2	CP/ Expressway	3	St. Paul's German Evangelical Lutheran Church district	17 <sup>th</sup> and Rose Street	Gothic Revival and Italianate church, school, and residence, circa 1892	No property to be taken. No adverse effect.
2/4	CN/ Moterm	4	Exhibition Building Historic District	Michigan State Fairgrounds	Dairy Cattle Building, Coliseum, Agriculture Building, Poultry Building, and Whitehall	No property to be taken. No adverse effect.
2/4	CN/ Moterm	5	Band Shell	Michigan State Fairgrounds	Outdoor proscenium stage, circa 1938	No property to be taken. No adverse effect.
2/4	CN/ Moterm	6	Grant House	Michigan State Fairgrounds	Balloon-framed house associated with Ulysses S. Grant, circa pre-1850	No property to be taken. No adverse effect.
2/4	CN/ Moterm	7	Garland Stove	Michigan State Fairgrounds	Large wood carved stove for commercial advertising art, circa late 1800s	No property to be taken. No adverse effect.
3/4	Liv-Jct	8	Michigan Box Company/ Spranger Wire Wheel Company	7175 Clayton Street	Factory originally built to make auto parts. Now pallets are made at the site.	Area needed for Alternatives 3 and 4 would require this property. Adverse effect.
3/4	Liv-Jct	9	Rickenbacker Motor Company/Springfield Body Corporation	4815 Cabot	Former factory that produced automobiles	Alternative 3 would require a portion of the factory that is not eligible. Alternative 4 would require land south of the buildings but no parts of the building. No adverse effect.
3/4	Liv-Jct	10	Frederick Wolf and Sons historic homes	West side of Central near St. John St.	Three 1890s Queen Ann homes (one is outside APE)	No property to be taken. No adverse effect.
3/4	Liv-Jct	11	House	6332 John Kronk	Historic home	No property to be taken. Determination of adverse effect not yet made.
3/4	Liv-Jct	12	Tomms House	3434 Martin Street	Historic home	No property to be taken. Adverse effect under Alternative 3.
3/4	Liv-Jct	13	Markey House	3504 Martin Street	Historic home	No property to be taken. Adverse effect under Alternative 3.
3	Liv-Jct	14	Federal Screw Works Factory	3301-3401 Martin Street	Former factory that produced fasteners for the auto industry.	Area needed for Alternative 3 would require this property. Adverse effect.
3/4	Liv-Jct	15	Livernois Avenue Art Deco Bridge	Near Livernois and John Kronk	Bridge	No property to be taken. No adverse effect.
3/4	Liv-Jct	16	Southern Avenue Twin Warren Truss Bridge	Southern Avenue west of Wyoming Street	Bridge	No property to be taken. No adverse effect.
3/4	Liv-Jct	17	Clippert Brick Company office	10500 Southern Avenue	Former office building for area brick companies	Building will not be affected. No adverse effect.
3/4	Liv-Jct	18	Central Avenue Fire Station/Engine Company No. 37	2820 Central Avenue	Fire Station	No property to be taken. No adverse effect.

Source: Commonwealth Cultural Resources Group





The three-building complex associated with St. Paul's German Evangelical Lutheran Church is recommended eligible as an historic district. It includes three brick buildings originally (1872/1873) associated with the St. Paul's German Evangelical Lutheran Church: the church, school, and residence located on the east side of 17th Street. While all are minimally altered, they continue to maintain a high degree of architectural integrity, and they are characteristic of styles (Gothic Revival and Italianate) popular during the third quarter of the nineteenth century (Criterion C). St. Paul's German Evangelical Lutheran church is the only surviving example of three German churches established between 1859 and 1873 in the immediate three-block area of 16th and 17th streets. The church, school, and parsonage are among the few surviving elements of the German ethnic neighborhood that emerged along the westerly fringe of the city's Irish-dominated Corktown district during the third quarter of the nineteenth century. As such, these three elements of the proposed St. Paul's Church Historic District also meet Criterion A, which requires that the district be associated with events or trends significant in history. No property will be taken at these sites and project implementation will not represent an adverse effect.

One previously identified archaeological site is in the study area (20WN274). It is located well to the south of the existing CP/Expressway terminal and will not be adversely affected by facility expansion. Early twentieth-century redevelopment impacts associated with the 1913 MCRR station and yard facility were extensive. These entailed the creation of multiple grade separations that surround the entirety of the property proposed for terminal expansion, along with cut-and-fill operations that raised the level of portions of the yard as much as 5 ft (1.5 m) to 8 ft (2.4 m) above the original ground surface. Therefore, given both the intensity and character of alterations in and around the project site the probability of encountering intact prehistoric or early historic archaeological remains is minimal. The use of the existing tractor-trailer yard and the Detroit Department of Public Works property, as part of the larger CP/Expressway expansion area, will not constitute an adverse affect upon area archaeological resources.

### **CP/Oak Terminal**

Nineteen commercial/industrial buildings dating to a ca. 1945-1959 context were identified and surveyed within the APE. None were judged eligible for nomination to the National Register. As a result of this assessment, the proposed DIFT expansion will not have an adverse effect upon National Register-eligible aboveground resources. The SHPO concurred that the APE for this terminal contained no National Register-eligible resources (see letter dated October 18, 2004 in Appendix A).

No previously recorded archaeological sites were found in the APE. Industrial development at and around the CP/Oak terminal has been a dominating aspect of land use since the 1940s. The trend was intensified from the 1950s through early 1970s with the same additional rebuilding activity in the easterly half of the APE during the 1990s. As a result, approximately 95 percent of the APE can be defined as built area, consisting of both buildings and extensive paved lot areas.

Therefore, due to the intensity of this past development of the CP/Oak project site, coupled with the elimination of the bulk of the open grounds west of Westwood, project implementation will not represent an adverse effect upon area archaeological resources.

## **CN/Moterm Terminal**

A review of previously recorded aboveground resources revealed three sites listed on the National Register in the area to the west of the proposed terminal expansion at the Michigan State Fairgrounds (MSF): the Dairy Cattle Building, the Coliseum, and the Agriculture Building (Table 4-26) (Figure 4-53). A reconnaissance-level survey of the MSF found that these three sites, along with the Poultry Building and Whitehall, should be combined as one district that is recommended eligible for the National Register. In addition to this listing, the survey found three other individual sites at the MSF that are recommended eligible for the National Register: the Band Shell, the Grant House, and the Garland Store. No property will be taken from any of these sites.

The SHPO concurred with the eligibility determinations for these sites and that there would be no effect on any of the properties identified as National Register eligible within the State Fairgrounds property (see letters dated October 18, 2004 and January 21, 2005 in Appendix A).

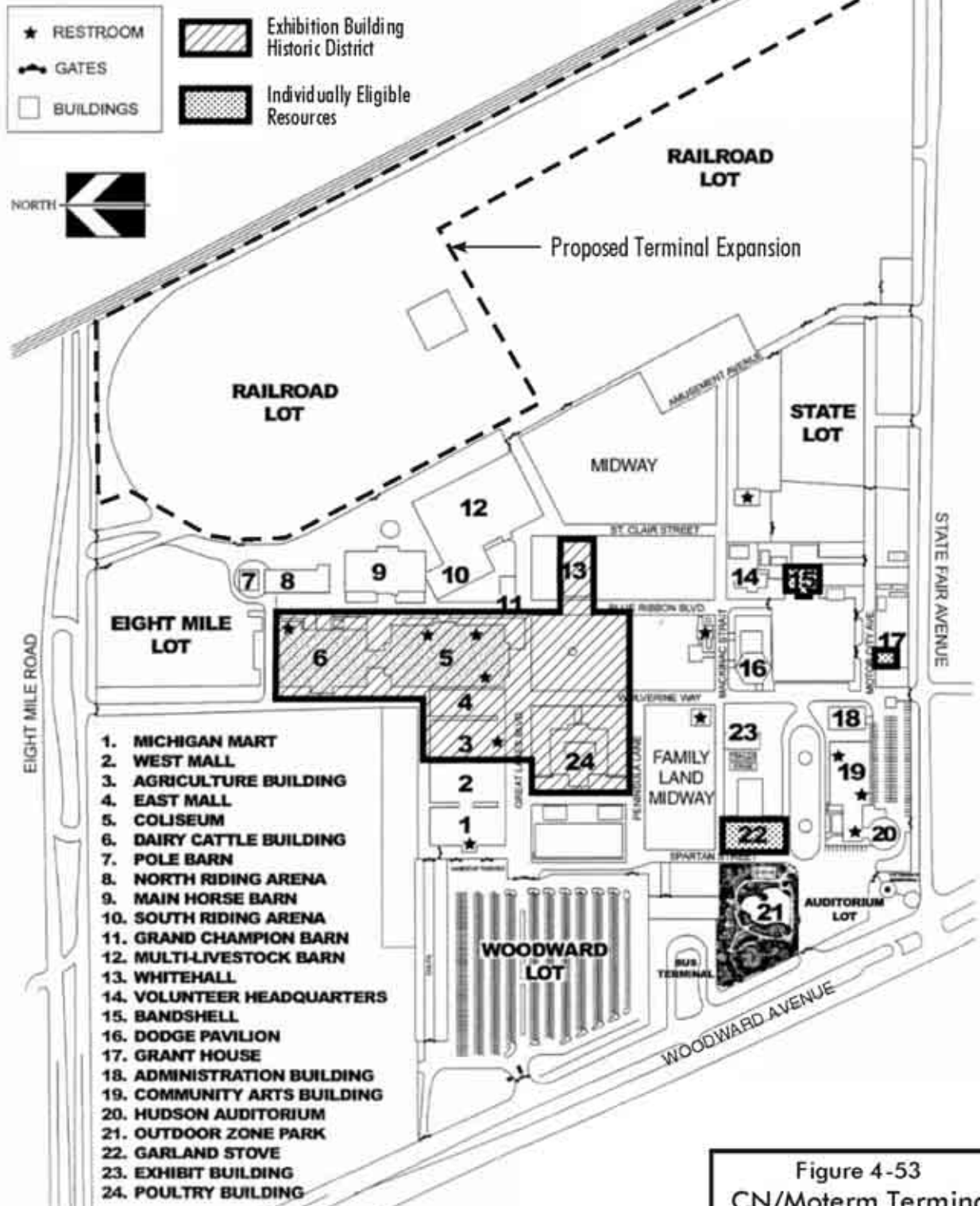
The area that would be needed for the expansion of the CN/Moterm yard is called the “Railroad Lot” on contemporary site plans of the Fairgrounds. Its existence as a leased property has been an ongoing feature of the Fairground’s land use since at least 1935 when the lot was occupied by the Detroit Racing Association. The Railroad Lot presently serves as a distinct component of the State Fairgrounds property used for automotive storage under a lease agreement with an auto distributor. Based on the foregoing, the Railroad Lot and its components are not eligible for listing on the NRHP either individually or as part of a district.

No previously-recorded archaeologic sites were found in the APE. Industrial development and redevelopment has been ongoing within the APE over the last 70 years. These activities include: 1) filling water courses on the east portion of the State Fairgrounds for development as a horse race track; 2) conversion of the horse track to auto use, including construction of bleachers; 3) grade separation of the railroad and Eight Mile Road; 4) construction and later removal of concrete pads put in place for horse barns along the north and south edges of the Fairgrounds; 5) development of a private softball field complex; 6) paving related to earlier railroad use; and, 7) covering with gravel to provide a surface for new vehicle storage. Therefore, the probability of encountering intact historic or prehistoric archaeologic remains within the proposed expansion area is extremely low.

### **4.13.3 Alternative 3: Consolidate All Four Class I Railroads’ Intermodal Activity at Livernois-Junction Yard Area**

A field survey of all pre-1959 standing structures was conducted, along with literature research and interviews with knowledgeable persons in the area to determine their historic significance and eligibility for listing on the National Register. Public meetings were held at which information about such resources was discussed. Consultation was undertaken with the SHPO (see letters dated October 18, 2004 and January 21, 2005 in Appendix A). As a result, 11 sites/districts are considered potentially eligible for listing on the National Register at the Livernois-Junction Yard area under the Consolidation Alternative (Table 4-26 and Figure 4-54).

# MICHIGAN STATE FAIRGROUNDS & EXPOSITION CENTER

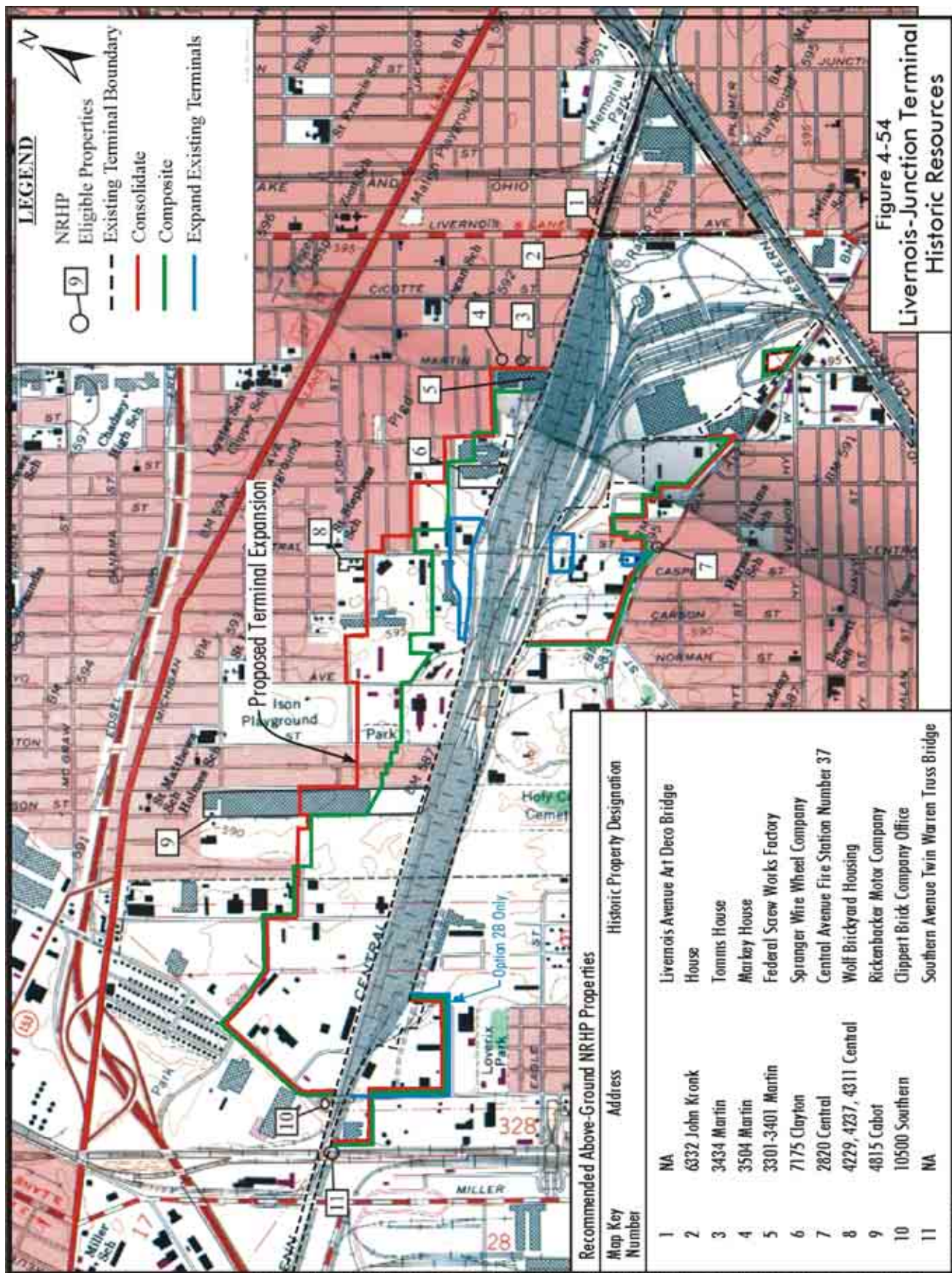


SOURCE: Michigan State Fair, 2003 and CCRG

1: Projects 20444/5 mikes/10/08/08

Figure 4-53  
CN/Moterm Terminal  
Historic Resources





Four of the eligible sites are expected to suffer an adverse effect from the project – the Spranger Wire Wheel Company building, the Federal Screw Works Factory, the Markey House, and the Tomms House. Additional information is needed on one of the other sites (the house at 6332 John Kronk) to determine if there will be an adverse effect. Nevertheless, due to the determination of an adverse effect on the four properties cited above, a Memorandum of Agreement (MOA) will be necessary and will be included in the FEIS, if Alternative 3 is the preferred alternative. It will stipulate conditions that mitigate impacts to the property adversely affected. Section 6 of this DEIS provides a Draft Section 4(f) Evaluation of the property that would experience an adverse effect and that would be covered in the MOA. Potentially eligible sites in the APE are discussed next.

The following are in, or partially in, the footprint of Alternative 3.

- The Michigan Box Company, also known as the General Box Company, and the Spranger Wire Wheel Company/Detroit Wire Wheel Corporation at 7175 Clayton Street between Parkinson Avenue and Central Avenue is likely eligible for the National Register. Alternative 3 will require the demolition of this property resulting in an adverse effect.
- The Federal Screw Works factory at 3301-3401 Martin Street is likely eligible for the National Register. Alternative 3 will require the demolition of this property resulting in an adverse effect.
- The Rickenbacker Motor Company building/Springfield Body Corporation that runs along Cabot is likely eligible for the National Register. Eligibility only applies to the northern part of the building not the southern part that was added in the late 1950s. A portion of the non-National Register eligible southern part of the building, is inside the project footprint. Removing this non-eligible portion of the building would have no adverse effect according to the SHPO (see letter dated January 21, 2005 in Appendix A).

The following are within the APE but outside of the proposed expansion footprint. No property will be taken from these sites.

- A historic house at 6332 John Kronk on the east end of the project area. A determination on whether there is an adverse visual effect on this site will be included in the FEIS, if Alternative 3 is chosen as the preferred alternative.
- The Tomms House at 3434 Martin Street. There will be a visual adverse effect due to the removal of the Federal Screw Works Factory across the street.
- The Markey House at 3504 Martin Street. There will be a visual adverse effect due to the removal of the Federal Screw Works Factory across the street.

The following are also within the APE but outside of the project footprint. No property will be taken from these sites and implementing Alternative 3 will not represent an adverse effect.

- Three 1890s Queen Ann homes associated with Frederick Wolf and his sons in the Central Avenue and St. John Street area at 4229, 4237, and 4311 Central Avenue make up a historic district that is likely eligible for the National Register.
- The Livernois Avenue Art Deco Bridge (rail) over Livernois Avenue near John Kronk.
- The Southern Avenue Twin Warren Truss Bridge on Southern Avenue west of Wyoming Street (still to be determined if this site is eligible for the National Register).
- The Clippert Brick Company Office at 10500 Southern Avenue.
- The Central Avenue Fire Station/Engine Company No. 37 at 2820 Central Avenue.

An archaeological survey was performed in the APE for the Alternative 3. All recorded sites are well beyond the APE. Most of the area has been previously disturbed. The impact of urban and industrial development over the past century has reduced the potential for archaeological site survival. This is especially evident in the destruction of the natural drainageways that previously laced the project area. Cut-and-fill operations along the creek margins, combined with the opening of brickyard clay pits, has had a catastrophic impact on the integrity and continued survival of any archaeological sites associated with the terminal expansion/acquisition parcels and in the APE. However, the SHPO has agreed with the assessment that field investigations at two archaeological sites should be conducted prior to construction, if Alternative 3 is chosen as the preferred alternative.

#### **4.13.4 Alternative 4: The Composite Option**

The Composite Alternative proposes the intermodal activities of three railroads (CSX, NS and Canadian Pacific) be consolidated at Livernois-Junction Yard, while the CN/Moterm terminal would be expanded onto the “Railroad Lot” on the Michigan State Fairgrounds property. The effects on cultural resources under this alternative are the same as those at CN/Moterm under Alternative 2 and smaller at Livernois-Junction Yard than under Alternative 3. No property would be taken from any of the eligible historic sites at the Fairgrounds. At the Livernois-Junction Yard the National Register eligible Spranger Wire Wheel Company is required for Alternative 4 resulting in an adverse effect. However, unlike Alternative 3, there would not be an adverse effect on the Federal Screw Works Factory, the Markey House, and the Tomms House.

### **4.14 Parkland and Public Recreation Land**

A number of parks are located near the study areas of the four terminals. These are shown on Figure 4-10a-d and listed in Table 4-9a-d along with other community facilities. The portion of the State Fairgrounds proposed for use under Alternatives 2 and 4 is considered to be public recreational land and so impacts to it are covered in Section 6 of the DEIS.

#### **4.14.1 Alternative 1: No Action**

Under the No Action Alternative no parkland would be directly or indirectly affected.

#### **4.14.2 Alternative 2: Improve/Expand Existing Terminals**

Under the Improve/Expand Alternative, the only recreation land affected would be approximately 35 acres of the State Fairgrounds (see Section 6 [the Draft 4(4) Evaluation] of this DEIS).

##### **Livernois-Junction Yard**

- Wilson Playground on Lonyo is to the north of the expansion area. It will not be directly or indirectly affected by the proposed terminal expansion, including noise.
- Loverix Park is south of the expansion area. It will not be directly or indirectly affected by the proposed terminal expansion, including noise.
- Patton Memorial Park is to the south of the expansion area. It will not be directly or indirectly affected by the proposed terminal expansion, including noise.
- Dearborn City Park is west of the expansion area. It will not be directly or indirectly affected by the proposed terminal expansion, including noise.

### **CP/Expressway Terminal**

- Roosevelt Park is to the northeast of the expansion area. It will not be directly or indirectly affected by the proposed terminal expansion, including noise.
- Macomb Park is directly north of the expansion area. It will not be directly or indirectly affected by the proposed terminal expansion, including noise.

### **CP/Oak Terminal**

No parkland will be directly or indirectly affected near the CP/Oak terminal under the Improve/Expand Alternative.

### **CN/Moterm Terminal**

- The eastern portion of the State Fairgrounds (approximately 35 acres), now leased for new automotive vehicle storage, would be used including parking used during the annual State Fair, which runs for about two weeks, usually in August.
- Hunt Playground is east of the existing railroad tracks and the potential expansion area across from the State Fairgrounds. It will not be directly or indirectly affected by the proposed terminal expansion, including noise.

#### **4.14.3 Alternative 3: Consolidate All Four Railroads' Intermodal Activity at Livernois-Junction Yard Area**

The conditions of Alternative 2 for the Livernois-Junction Yard, presented above, apply here.

#### **4.14.4 Alternative 4: The Composite Option**

The conditions of Alternative 2 for the Livernois-Junction Yard and the CN/Moterm terminal, presented above, apply here.

## **4.15 Visual Conditions**

### **4.15.1 Alternative 1: No Action**

Under the No Action Alternative no changes to visual conditions would occur. Abandoned properties, salvage yards, and industrial facilities would remain without improvements to the properties or landscaped buffer areas.

### **4.15.2 Alternative 2: Improve/Expand Existing Terminals**

#### **Livernois-Junction Yard**

Under Alternative 2, the north side of the Livernois-Junction Yard, and a portion of the south side, would have a barrier wall for security which would screen the terminal (refer to Figures 3-3, 3-4 and 3-5). Nevertheless, abandoned properties, salvage yards, and industrial facilities would remain immediately adjacent to the terminal.



### **CP/Expressway Terminal**

Under Alternative 2, a City of Detroit Public Works facility, industrial land, and existing rail facilities would be used to expand the CP/Expressway terminal. Visual conditions would remain similar to existing conditions.

### **CP/Oak Terminal**

Under Alternative 2, industrial land and existing rail facilities would be used for the CP/Oak terminal. A barrier wall for security would be built between the yard and the area to the north, which is primarily industrial. This wall would shield the view of the yard (refer to Figure 3-10).

### **CN/Moterm Terminal**

Under Alternative 2, land now used for parking at the Michigan State Fairgrounds would be converted to terminal use. A barrier wall for security would be built on the east side of the mainline tracks south of Eight Mile Road. This would shield the view of the yard (refer to Figure 3-11).

#### **4.15.3 Alternative 3: Consolidate All Four Railroads' Intermodal Activity at Livernois-Junction Yard Area**

Under Alternative 3, a barrier wall would be built for security on the north side, and part of the south side, of the expanded Livernois-Junction Yard (refer to Figure 3-6). A new perimeter road is also part of the plans on the terminal's north boundary. These features would shield the view of the terminal and provide a more visually pleasing setting than the existing conditions. Several abandoned properties, salvage yards, and industrial facilities would be removed and new intermodal facilities would be built in their place. Figure 4-55 illustrates several areas that would be visually improved under the Consolidation alternative. Figure 4-56 provides an example of the visual relationship between the Melvindale intermodal terminal in Detroit and the adjacent neighborhood, in a similar setting.

#### **4.15.4 Alternative 4: The Composite Option**

Under Alternative 4, the visual conditions at the Livernois-Junction Yard will be essentially the same as those for the facilities as described above for Alternative 3 except that the north boundary would be different. The conditions expected at the CN/Moterm terminal for Alternative 4 will be those for the facilities as described above for Alternative 2.

### **4.16 Contaminated Sites**

A Project Area Contamination Survey (PACS), or Level 1 environmental assessment, was conducted for the DIFT project.<sup>18</sup> The purpose of the PACS was to investigate parcels of property potentially affected by the project for the presence of environmental contamination and to determine the need for further investigation and mitigation measures. Because there is no development expected outside the rail terminal under the No Action Alternative, it is not the subject of the PACS.

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<sup>18</sup> "Project Area Contamination Survey," The Corradino Group, August 2004.



Area on Kronk, near Stecker, that potentially would be taken by the Consolidate and Composite Alternatives.



Area on Central, south of existing yard, that potentially would be taken by the Consolidate and Composite Alternatives.



Area on Clayton, east of Central, that potentially would be taken by the Consolidate and Composite Alternatives.

**Figure 4-55**  
**Areas Around Livernois-**  
**Junction Yard with**  
**Opportunities for Visual**  
**Enhancements**

Source: The Corradino Group of Michigan, Inc.



**Figure 4-56**  
**Triple Crown Terminal in**  
**Melvindale, Michigan**

Source: The Corradino Group of Michigan, Inc.

The PACS included field reconnaissance interviews with business owners, review of federal and state environmental records, and review of historical land use records. The PACS assessed commercial and industrial properties that potentially would be acquired under one or more of the Action Alternatives being studied. Residential properties were not investigated unless there were specific observations or reported indications of contamination. Nevertheless, most, if not all, are expected to have some asbestos materials which would be appropriately handled during their removal, if such action occurs.

More than five dozen sites were investigated for contamination (see Table 4-27 and Figure 1-16). Table 4-27 contains environmental records, terminal location and affected alternative information, and a contamination potential rating for each site. The federal environmental records and databases searched were CERCLIS (Comprehensive Environmental Response, Compensation, and Liability, Information System); NPL (National Priorities List [Superfund]); RCRIS (Resource Conservation and Recovery Information System); CORRACTS (Corrective Action Report); and, ERNS (Emergency Response Notification System). State environmental records that were reviewed include SHWS (State Contaminated Sites); SWF/LF (Solid Waste Facilities Database); LUST (Leaking Underground Storage Tanks); UST (Underground Storage Tanks); BEA (Baseline Environmental Assessment); Indian UST (USTs on Indian land); and, HIST LF (Inactive Solid Waste Facilities). These databases and lists are those specified in ASTM E1527-00 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process).

The PACS found: no CERCLIS NPL sites; two CERCLIS non-NPL sites, both of which were NFRAP (No Further Remedial Action Planned) sites – ANR Freight System (Crown Enterprises), 3685 Central Avenue, and Central Transport, Inc., 4440 Wyoming; no RCRIS TSD facilities (Treatment, Storage or Disposal); 31 RCRIS hazardous waste generators; no CORRACTS sites; four ERNS sites; nine Michigan Contaminated Sites List sites; and, 28 LUST sites.

Based on the interviews and research conducted, each of the sites was rated low (L), medium (M), or high (H) for potential environmental contamination.

L (Low): These sites include known current or former hazardous or petroleum handlers that are not currently being investigated or remediating an environmental problem. Examples of this category are gas stations that have been designated “closed LUST” sites and businesses that handle hazardous materials or petroleum.

M/H (Medium/High): These sites have a reasonable chance of contamination on a given site. Examples of this category include gas stations that are identified by MDEQ as open LUST sites, former gas stations closed prior to December 1988 (the date of current federal and state UST regulations), sites on the Michigan Central Contaminated Sites List, and sites that exhibit indications of improper handling of materials, such as the presence of stained soils, improperly stored materials, etc., or other evidence of a recognized environmental condition. These sites may need soil borings to conclusively characterize their environmental condition.



**Table 4-27  
Contamination Summary**

Alt.	Terminal	SID No.	Site Name	Address or Location	City	Records Observations							Alt.
						CERCLIS (non NPL)	MI Contam. Sites	LUST	UST	RCRIS – Haz. Waste Generators	Other <sup>a</sup>	Contamination Potential Rating <sup>e</sup>	
3/4	Liv-Jct	1	MNP Steel Service and Warehouse	3401 Martin	Detroit			X-C	X	X	X	M/H	3/4
3/4	Liv-Jct	2	Vacant Industrial	3601 Parkinson	Detroit		X <sup>c</sup>	X-O	X		X	M/H	3/4
3	Liv-Jct	3	Gal Cro Steel Processing	3631 Parkinson	Detroit		X <sup>c</sup>	X-O	X		X	M/H	3
3/4	Liv-Jct	4	Fontana Forest Products	7175 Clayton	Detroit				X		X	L	3/4
3/4	Liv-Jct	5	Red's Towing Service	7301 Clayton	Detroit						X	M/H	3/4
2/3/4	Liv-Jct	6	Advance Auto Glass and Parts	3600 Central	Detroit						X	M/H	2/3/4
2/3/4	Liv-Jct	7	Herman Brothers Pet Products/Trager Research & Manufacturing	3650 Central	Detroit						X	M/H	2/3/4
3/4	Liv-Jct	8	Heavy Ts Auto Parts/Rod Auto Parts	3760 Central	Detroit		X <sup>d</sup>				X	M/H	3/4
3	Liv-Jct	9	American Minority Sys/Luco Cartage/Priority Container Serv/PSA-AMSI	7414 Clayton	Detroit						X	L	3
3/4	Liv-Jct	10	Michigan Wholesale & Repair	3700 Central	Detroit						X	L	3/4
3/4	Liv-Jct	11	Lacaria Concrete Construction	3720 Central	Detroit						X	L	3/4
2/3/4	Liv-Jct	12	Crown Enterprises (ANR Freight System)	3685 Central	Detroit	X <sup>b</sup>	X <sup>c</sup>		X	X	X	M/H	2/3/4
3	Liv-Jct	13	Superior Diesel Repair	3735 Central	Detroit					X		M/H	3
3	Liv-Jct	14	Panacea - Property 1	4175-95 Central	Detroit			X-O	X		X	M/H	3
3	Liv-Jct	15	Panacea - Property 2	3936-40 Lonyo	Detroit				X			M/H	3
3	Liv-Jct	16	Panacea - Property 3	3950 Lonyo	Detroit			X-O	X	X		M/H	3
3	Liv-Jct	17	Stanley Cupp	4111 Central	Detroit					X		M/H	3
3/4	Liv-Jct	18	Dix Scrap Iron & Metal Co	3890 Lonyo	Detroit						X	M/H	3/4
3/4	Liv-Jct	19	Big B's Auto	3800 Lonyo	Detroit						X	M/H	3/4
3/4	Liv-Jct	20	Spartan Industrial	3896,3930-34 Lonyo	Detroit			X-C	X	X		M/H	3/4
3/4	Liv-Jct	21	Spartan Industrial Warehouse	8350 John Kronk	Detroit			X-C	X		X	L	3/4
3/4	Liv-Jct	22	Spartan Express	3901 Lonyo	Detroit			X-O	X	X		M/H	3/4
3	Liv-Jct	23	Jorgenson Collision Center	3949 Lonyo	Detroit					X		M/H	3
3	Liv-Jct	24	American International	4011 Lonyo	Detroit			X-O	X	X		M/H	3

<sup>a</sup> - Other potential contamination site identified by reconnaissance and/or other records.

<sup>b</sup> - Delisted CERCLIS NFRAP (No Further Remedial Action Planned) site.

<sup>c</sup> - Baseline Environmental Assessment has been conducted.

<sup>d</sup> - Michigan State Priority List site.

<sup>e</sup> - Ratings are: L = Low, M = Medium, H = High

LUST - Leaking underground storage tank; X-C = Closed case; X-O = Open case.

UST - Underground storage tank.

RCRIS - Resource Conservation and Recovery Information System.

CERCLIS - Comprehensive Environmental Response, Compensation and Liability Information System.

NPL - National Priority Listing.

**Table 4-27 (continued)  
Contamination Summary**

Alt.	Terminal	SID No.	Site Name	Address or Location	City	Records/Observations							Alt.
						CERCLIS (non NPL)	MI Contam. Sites	LUST	UST	RCRIS - Haz. Waste Generators	Other <sup>a</sup>	Contamination Potential Rating <sup>e</sup>	
3/4	Liv-Jct	25	Motor City Corporation	3801 Trenton	Detroit					X	X	M/H	3/4
3/4	Liv-Jct	26	S L Cabot, LLC	4157 Cabot	Detroit		X <sup>c</sup>	X-C	X	X		M/H	3/4
3/4	Liv-Jct	27	Ferrous Processing Corp	9100 J Kronk	Detroit				X	X		M/H	3/4
3/4	Liv-Jct	28	Williams Detroit-Alison	4000 Stecker	Dearborn			X-C	X	X		L	3/4
3/4	Liv-Jct	29	Jebco Investments LC-Property 1	4200-4300 Stecker	Dearborn						X	L	3/4
3/4	Liv-Jct	30	National Industrial Maintenance	4400 Stecker	Dearborn					X		M/H	3/4
3/4	Liv-Jct	31	R.E. Leggette Company	9335 St. Stephens	Dearborn		X <sup>d</sup>	X-O	X	X		M/H	3/4
3/4	Liv-Jct	32	Truck City, Inc.	4121 Stecker	Dearborn					X		M/H	3/4
3/4	Liv-Jct	33	MCI Telecommunications Corp.	4401 Stecker	Dearborn			X-O			X	M/H	3/4
3/4	Liv-Jct	34	Jebco Investments LC-Property 2	4401 Stecker	Dearborn			X-O		X		M/H	3/4
3/4	Liv-Jct	35	K & R Express	4601 Stecker	Dearborn			X-C	X			M/H	3/4
3/4	Liv-Jct	36	TIP Trailer Leasing	10000 Southern	Dearborn						X	M/H	3/4
3/4	Liv-Jct	37	Advance Pool	10400 Southern	Dearborn			X-O		X	X	M/H	3/4
3/4	Liv-Jct	38	Nour's Investment Company	4210-20 Wyoming	Dearborn			X-O	X	X	X	M/H	3/4
3/4	Liv-Jct	39	GLS Leasco, Inc.	4410 Wyoming	Dearborn				X	X		M/H	3/4
3/4	Liv-Jct	40	Central Transport, Inc.	4440 Wyoming	Dearborn	X	X	X-O	X	X	X	M/H	3/4
3/4	Liv-Jct	41	Jouney, Inc. Steel Service/Seng Tire	4800 Wyoming	Dearborn						X	L	3/4
3/4	Liv-Jct	42	Action Tire Service Co	3969 Wyoming	Dearborn					X	X	M/H	3/4
2 <sup>f</sup> /3/4	Liv-Jct	43	Ford Motor Vulcan Plant	3900 Wyoming	Dearborn					X	X	M/H	2 <sup>f</sup> /3/4
2 <sup>f</sup> /3/4	Liv-Jct	44	Cummins Michigan	3760 Wyoming	Dearborn			X-O		X		M/H	2 <sup>f</sup> /3/4
2 <sup>f</sup> /3/4	Liv-Jct	45	Wyoming Self-service	3740 Wyoming	Dearborn						X	L	2 <sup>f</sup> /3/4
2 <sup>f</sup> /3/4	Liv-Jct	46	Vacant Freight Terminal	10100 Mercier	Dearborn						X	L	2 <sup>f</sup> /3/4
2 <sup>f</sup> /3/4	Liv-Jct	47	Vacant Freight Terminal	9900 Mercier	Dearborn			X-O	X	X		M/H	2 <sup>f</sup> /3/4
3/4	Liv-Jct	48	Boulevard & Trumbull Inv., Inc.	7700 Dix <sup>g</sup>	Detroit		X	X-O	X	X	X	M/H	3/4

<sup>a</sup> - Other potential contamination site identified by reconnaissance and/or other records.

<sup>b</sup> - Delisted CERCLIS NFRAP (No Further Remedial Action Planned) site.

<sup>c</sup> - Baseline Environmental Assessment has been conducted.

<sup>d</sup> - Michigan State Priority List site.

<sup>e</sup> - Ratings are: L = Low, M = Medium, H = High

<sup>f</sup> - These properties would be required under Alternative 2 Option B, but not needed under Alternative 2 Options A and C.

<sup>g</sup> - This site also includes 7800, 7840, 7904 and 7950 Dix.

LUST - Leaking underground storage tank; X-C = Closed case; X-O = Open case.

UST - Underground storage tank.

RCRIS - Resource Conservation and Recovery Information System.

CERCLIS - Comprehensive Environmental Response, Compensation and Liability Information System.

NPL - National Priority Listing.

**Table 4-27 (continued)  
Contamination Summary**

Alt.	Terminal	SID No.	Site Name	Address or Location	City	Records/Observations							Alt.
						CERCLIS (non NPL)	MI Contam. Sites	LUST	UST	RCRIS – Haz. Waste Generators	Other <sup>a</sup>	Contamination Potential Rating <sup>e</sup>	
2/3/4	Liv-Jct	49	Lafayette Recycling	7700,7730,7750 Dix	Detroit			X-O	X		X	M/H	2/3/4
3/4	Liv-Jct	50	M. Dick & S.F. Corbell	2881 Central <sup>h</sup>	Detroit						X	M/H	3/4
3/4	Liv-Jct	51	Central Avenue Properties LLC	2921, 2951 Central	Detroit		X				X	M/H	3/4
3/4	Liv-Jct	52	Thomas Adams, Jr.	2971,81,91 Central	Detroit						X	L	3/4
2/3/4	Liv-Jct	53	Chester Herman Warehouse	3005,11 21 Central	Detroit						X	L	2/3/4
2/3/4	Liv-Jct	54	Central Auto Parts	3022 Central/7276 Dix	Detroit						X	M/H	2/3/4
3/4	Liv-Jct	55	Central Auto Clinic	2910,2930 Central	Detroit						X	M/H	3/4
3/4	Liv-Jct	56	S. Corbell Property	2880-96 Central	Detroit						X	M/H	3/4
3/4	Liv-Jct	57	Vacant Commercial Lots	2803-2889 Stair	Detroit						X	L	3/4
3/4	Liv-Jct	58	Trimodal	7100,7256,60,7272 Dix	Detroit			X-C	X	X		M/H	3/4
2	CP/Oak	59	Milford Fabricating Company	12810 Auburn <sup>i</sup>	Detroit			X-C	X		X	M/H	2
2	CP/Oak	60	Madias Brothers/Grove Recycling/First Evergreen	12850 Evergreen	Detroit			X-C	X	X		M/H	2
2	CP/Oak	61	Gateway Detroit Assoc/Parsec/Roofing Ins/Piston Auto/Technicolor. LLC	12601 Southfield	Detroit			X-O	X	X	X	M/H	2
2	CP/Oak	62	T&B Properties/Michigan Glove & Safety, Inc.	12801 Auburn	Detroit					X	X	L	2
2	CP/Oak	63	Praxair Distribution	12820 Evergreen	Detroit			X-O	X	X	X	M/H	2
2	CP/Oak	64	L&M Leasing Associates/Ferrini Contracting Corp.	12735 Auburn	Detroit				X	X	X	M/H	2
2	CP/Oak	65	Metaldyne	19001 Glendale	Detroit				X	X	X	M/H	2
2	CP/Expressway	66	Department of Public Works	2633 Michigan	Detroit			X-O		X	X	M/H	2
2/3/4	Liv-Jct	67	Detroit Brake Parcel	5030 Military	Detroit						X	L	2/3/4

<sup>a</sup> - Other potential contamination site identified by reconnaissance and/or other records.

<sup>b</sup> - Delisted CERCLIS NFRAP (No Further Remedial Action Planned) site.

<sup>c</sup> - Baseline Environmental Assessment has been conducted.

<sup>d</sup> - Michigan State Priority List site.

<sup>e</sup> - Ratings are: L = Low, M = Medium, H = High

<sup>f</sup> - These properties would be required under Alternative 2 Option B, but not needed under Alternative 2 Options A and C. NPL - National Priority Listing.

<sup>g</sup> - This site also includes 7800, 7840, 7904 and 7950 Dix.

<sup>h</sup> - This site also includes 2881, 2887, 2889 and 2897 Central.

<sup>i</sup> - This site also includes 12820 Auburn, 12620, 12646, 12650, 12660, and 12661 Westwood.

LUST - Leaking underground storage tank; X-C = Closed case; X-O = Open case.

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RCRIS - Resource Conservation and Recovery Information System.

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Source: The Corradino Group of Michigan, Inc.

Nine of the 15 M/H rated sites for Alternative 2, and all of the M/H rated sites for Alternative 3 (45 sites) and Alternative 4 (37 sites) are located in the area adjacent to the Livernois-Junction Yard. This area has been in industrial/commercial usage for 100 years or more and is predominantly occupied by automobile salvage businesses, truck and automotive repair shops and motor freight terminals. The most common environmental issues associated with these land uses are soil impacts from oils, metals, and solvents and subsurface soil/groundwater impacts from leaking petroleum underground storage tanks. All sites rated M/H may need further investigation and/or soil borings to further assess contamination potential.

The PACS also investigated a vacant parcel that is part of the Detroit Brake Machining property on the northeast corner of I-94 and Livernois Avenue. This site was reviewed because it would be acquired for improvements to the I-94/Livernois interchange for Alternatives 2, 3 and 4. This site was rated Low for contamination potential based on a review of environmental and historical land use records. Additional investigation would be needed if right-of-way from the adjoining Detroit Brake forge property is to be acquired.

The review of historical land use records revealed that several brickyards and clay pits were located along John Kronk in the late 1800s and early 1900s. Some of the historical references suggest that industrial wastes were used to backfill the clay pits. Some of the landowners interviewed during the PACS noted the possibility of fill on their properties. The review of MDEQ records did not identify any records or investigative reports of filled clay pits in the project area. Sites located at former clay pits were rated M/H because of the possibility of contaminated fill. These sites and the Central Transport site at 4440 Wyoming, which was reportedly used as a landfill, will require more extensive investigations to characterize their environmental condition.

It is expected that many of the impacts identified during the PACS can be managed through the use of measures such as limited soil removal. Most of the M/H rated LUST sites identified for this project are currently being remediated under the jurisdiction of MDEQ and will likely be restored before the property acquisition phase of the project begins.

A limited Preliminary Site Investigation (PSI) was also conducted as part of the environmental assessment process. The purpose of the PSI was to further investigate parcels of property identified in the PACS as having known or suspected contamination. Typically, the PSI consists of on-site sampling of soils, groundwater, and/or surface water and laboratory analysis of samples. The PSI that was conducted for the DIFT Project consisted of soil borings in public rights-of-way near the Livernois-Junction Yard, the CP/Expressway and CP/Oak terminals in Detroit, because landowners would not grant permission to collect samples on their properties. The soil borings in the public rights-of-way provided a means of examining subsurface soil conditions to identify indications of pervasive contamination and backfilled clay pits, which have been well documented in the vicinity of the Livernois-Junction Yard. The findings of the PSI did not reveal any indications of pervasive soil contamination or fill. No soil borings were conducted in Dearborn for the Livernois-Junction Yard, or at the CN/Moterm terminal (Ferndale). They will be needed if the project moves forward.

With project implementation of any Action Alternative, additional soil borings will be required before a property is acquired/remediated. Impacts will be minimized by disposing contaminated materials properly and by protecting workers. A Risk Assessment Plan will be developed, if the DIFT project goes forward, to include a Worker Health and Safety Plan. If monitoring wells are present, they will be abandoned properly. All contaminated areas will be marked on the plans. A



Utility Plan will also be prepared to ensure no deep utility cuts will impact and/or spread existing contamination.

## **4.17 Indirect and Cumulative Impacts**

The indirect (secondary) and cumulative effects associated with the proposed improvements to intermodal terminal development are presented here. The basis upon which the analysis was conducted is defined in federal guidance, which indicates the following:

Indirect (secondary) effects – Caused by an action (intermodal terminal expansion) and occurring later in time or farther removed in distance, but occurring in the reasonably foreseeable future (40 CFR 1508.8(b)).

Cumulative effects – Resulting from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7).

The direct and indirect effects are presented in Section 4.3, particularly 4.3.2 and Table 4-14. The cumulative effects are summarized in Table 4-15, they are elaborated upon here.

### **4.17.1 Cumulative Effects**

The most significant past, present and foreseeable future sections that affect each of the terminal areas are summarized here:

#### **Livernois-Junction Yard/CP Expressway Terminal Area**

The trend towards the urbanization of this terminal area is directly linked to the elaboration of an existing railroad routing coupled with the opening of Michigan's northern mineral ranges beginning in the 1850s. In 1863, the Grand Trunk Union Depot passenger station was built. The Michigan Central passenger station, on West Vernor Highway south of Michigan Avenue, was finished in 1909, immediately following the railroad tunnel to Windsor. The Ambassador Bridge was opened in 1928.

Construction of I-75 began in 1962 and was completed in 1972. It cuts through the Livernois-Junction Yard/CP Expressway terminal area. I-94 was completed between the mid-1950s and early 1960s through the Livernois terminal area. I-96 connects with both I-94 and I-75 in the terminal area. These freeways are considered intrusions on otherwise tightly-knit neighborhoods.

The primary factor driving development in the southwest area of Detroit/east Dearborn was the creation of Ford Motor Company's Rouge Plant in 1918/1919. Housing development in the terminal area bounded by Livernois (east), Michigan (north), Wyoming (west), and Dix/West Vernor (south) is dated primarily between 1900 and 1929. But, since its heyday, this part of Detroit, and all of the City, have been affected by outmigration of corporations, then people. The globalization of businesses, typified by such pacts as the North American Free Trade Agreement (NAFTA), has fueled that change. Notable exceptions are Ford Motor Company's \$2 billion investment in re-engineering its Rouge Plant and General Motors' move to Downtown Detroit.

Nevertheless, ongoing revitalization in the area includes:

- Bagley Housing Condominium Development.
- Continued redevelopment along Vernor Highway, including the Bowtie area at the Vernor/Livernois Avenue intersection.
- Continued housing stabilization due to code enforcement and related activities.
- Housing development in east Dearborn east of Wyoming served by Roberts Street.
- A new Museum of Arab Culture opposite the Dearborn City Hall
- Expansion of Truck City in an area bounded by Michigan, Southern, Wyoming and Stecker.
- Potential revitalization of Michigan Central Depot to Detroit police headquarters and other office space.
- Proposed west Riverfront Development.
- Potential revitalization of Tiger Stadium.
- Proposed housing along Michigan Avenue, east of West Grant Boulevard.
- Proposed greenway development at Romanowski Park.

Infrastructure developments include:

- A combined sewage overflow facility at Patton Park.
- A proposed conversion by a private venture of the Detroit-Windsor Railroad tunnels to truck and construction of a new rail tunnel.
- An improved connection between the Ambassador Bridge and the interstate highway system.
- A possible new border crossing.
- Rehabilitating I-94.
- Potential passenger rail service between Detroit and Ann Arbor as well as Metro Airport passing through the Livernois-Junction Yard area.
- Possible high-type transit (bus rapid transit or light rail are potential examples of improvements) in almost one dozen corridors, including along Michigan Avenue and Fort Street within the terminal area.

The future trend of development in the Livernois-Junction Yard/CP Expressway terminal area is summarized in the City of Detroit Master Plan of Policies which views the area as follows:

*“Southwest Detroit has two outstanding economic characteristics: an exceptional concentration of very heavy industry, and a unique convergence of freight transportation modes. Weaknesses of the Sector relate to economic obsolescence in both the industrial and commercial plant. Strengths of the area include the Detroit River as a unique attraction, the fixed nature of the transport infrastructure, the availability of many sound industrial buildings, and the shopping habits of many local residents favoring neighborhood stores.*

*“Detroit’s major concentration of ports, rail facilities, truck terminals, pipelines, international crossings and associated or support facilities and organizations occurs in the Southwest Sector. This remains unchanged despite the serious and continuing erosion of the Sector’s manufacturing base. Only to a limited extent can changing technology, changing corporate ownership patterns, or other evolutionary factors disperse southwest Detroit’s highly significant concentration of freight facilities. In fact, prevailing economic forces actually favor continued concentration.*

*“The Southwest Sector, therefore, will remain an area of primary economic importance, and industrial activities, within the limits of sound planning and environmental protection.*

*“Keys to the renewal of the Southwest area will include an improved education system aimed at specific needs of the residents (including career training and the re-education of adults), a safe, secure, and healthy environment, good recreational facilities, and improved public transportation.”*

The Dearborn Master Plan states the following:

*“The Dearborn master plan proposes continuation of an extensive belt of general industrial land which follows the railroad lines along the entire eastern side of Dearborn. Within this large industrial corridor are located the Ford Motor Company, Chrysler Corporation, American Blower Company, the Detroit Water Board, and many other large industrial installations. The only exception to this large industrial corridor on the city’s east side are the older residential neighborhoods, which exist in the vicinity of Dix Road and Wyoming Avenue. The Detroit master plan proposes a similar band of general industrial use along Detroit’s boundary with Dearborn. Adjacent to the corresponding Detroit industrial corridor are older residential neighborhoods. The adjoining Dearborn and Detroit industrial areas form one of the major heavy manufacturing corridors in southeast Michigan. The continued vitality of this industrial corridor will depend on the need to rebuild and improve the obsolete I-94 Industrial Freeway and the need to introduce newer forms of multi-modal transportation. The railroad line which previously served that portion of the industrial corridor between Ford Road and Tireman Avenue has been recently abandoned. The Industrial Freeway portion of Interstate-94 is an antiquated expressway which was never designed to carry the high volumes of traffic which it now carries. The interface of this expressway with Dearborn’s major street pattern and the design of the ramping system need to be completely redesigned and rebuilt to serve modern needs. Along its southeast boundary, Dearborn and Detroit share Patton Park, a major urban park, which is adjacent to the Woodmere Cemetery in Detroit. The park and cemetery are very compatible adjoining land uses to the older residential neighborhoods which exist in Dearborn in the Dix Road/Wyoming area.*

*“Both the Dearborn and Detroit master plans indicate a continuation of lower-density single-family neighborhoods on both sides of Tireman Avenue on Dearborn’s northernmost boundary. Both Dearborn and Detroit indicate a strip commercial development in their master plans along the common boundary which they share along Greenfield Road. In general, the City of Detroit’s master plan indicates low-density single family development throughout those neighborhoods which are north of Ford Road. There are no problems of land use compatibility between the two cities.”*

### **CP/Oak Terminal Area**

The Detroit, Lansing & Lake Michigan Railroad was completed across the terminal area from east to west in 1871. In 1891, the line was merged with the Flint & Pere Marquette Railroad, which opened a spur-line to the southwest Detroit manufacturing center at Delray. This area, like all others in Detroit, experienced in the last 30+ years a significant outmigration of businesses, jobs and, then, population. As noted earlier, the globalization of business has had a major effect on this place which was once known as “The Arsenal of Democracy.” The construction of expressways fostered outward-moving development in the second half of the 20th century. The Southfield Freeway (M-39) connecting I-94 to Eight Mile Road (M-102) was completed between Schoolcraft and Six Mile Road in 1963. The I-96 connector from I-75 to I-275 was completed in 1975.

Post-1910 land use patterns were directly influenced by Detroit’s industrial growth. During the succeeding decades, and through the start of World War II, the entirety of the CP/Oak terminal area was rapidly subdivided for housing and small industry. The process of industrial development was further heightened during World War II and the immediate post-war period. In the 1947 Detroit Planning Commission land use report, the CP/Oak terminal area was identified as being in the fastest growing new industrial corridors that ribboned the city along its extended network of railroads. But, development in the area slowed considerably. Now it is largely focused in the commercial revitalization of Grand River Avenue and continued stabilization of housing through code enforcement and related activities.

New infrastructure development in the area is limited, beyond regular maintenance and repair of existing facilities. Long-term plans by SEMCOG include high-type transit facilities/services along Grand River Avenue and in the vicinity of the Southfield Freeway.

Unlike the Southwest Sector of Detroit, the Detroit Master Plan of Policies is silent on the issue of the CP/Oak rail terminal.

It portrays the future land use/development trends in areas around the terminal (known as the West Sector) as follows:

*“The physical condition of much of the housing, commercial, and industrial development in the West Sector is generally good, a reflection of the fact that much of the area developed after World War II and is one of the new parts of Detroit.*

*“The West Sector has the potential to continue to be one of Detroit’s most popular areas for family living. It offers a wide variety of substantial single-family and apartment housing, a very generous amount of recreation facilities, and good accessibility to downtown and suburban shopping and employment.”*



## **CN/Moterm Terminal Area**

CN/Moterm has direct access to two interstates: I-696 running east/west and I-75 running north/south. Primary exits along I-696 that serve the area include Woodward Avenue (exit 16), Schaefer Highway (exit 14), and I-75 (exit 18). Primary exits along I-75 that serve the area include Nine Mile Road (exit 60), Eight Mile Road (exit 59), and Six Mile Road (exit 57). The area is also served by State Highway 1 (Woodward Avenue), linking downtown Detroit with Pontiac and by State Highway 102 (Eight Mile Road).

The 1905 placement of the Michigan State Fairgrounds on the edge of Wayne County's northern boundary with Oakland County established the facility in the rural countryside separating Detroit and Pontiac. Over the next quarter century, growth, emanating out of Detroit, completely changed the surrounding landscape.

The proximity of Ford Motor Company's Highland Park plant was the driving force in urban development throughout north Detroit and the Royal Oak Township area during the first quarter of the 20th century, with development primarily concentrated along Woodward Avenue. The creation of the cities of Highland Park (1918), Hamtramck (1922), and Royal Oak (1921) was shortly followed by the incorporation of the cities of Ferndale (1927), Pleasant Ridge (1928), Berkley (1932), and Huntington Woods (1932).

Throughout the decade following the close of World War I, Detroit's north-end neighborhoods were promoted as areas of housing development for the upwardly mobile, middle class. As a direct result of automotive plant development in the nearby Highland Park and Hamtramck communities, between 1939 and 1945, the number of Oakland County residents employed in local suburban plants jumped from 2,000 to 21,000. In 1955, Ferndale advertised itself as being "on the world's greatest highway," further noting that upwards of 55 percent of the municipal tax value (\$45.8 million) was based on business and industrial properties, "...thus insuring stability to the city's financial future". The Grand Trunk Railroad yard (now the CN/Moterm terminal) was described as being "central to the auto centers of Detroit, Pontiac and Flint." The commentary went on to note that,

"The residential quality of Ferndale has been improved by this industrial growth, for the reason that the industrial district has been confined by the far-sighted authorities to the railroad neighborhood in the eastern part of the city. This control has also expressed itself in the high character of industries located here."<sup>19</sup>

Much of that has changed with the changing competitive environment. For example, Highland Park has experienced the loss to competing communities of its largest employer. Nevertheless, it continues to pursue sustainability.

Major revitalization efforts in the four cities that host the CN/Moterm terminal area (Detroit, Ferndale, Highland Park and Hazel Park) include:

- Planned redevelopment of the southeast corner of Woodward Avenue and Eight Mile Road.
- Proposed development at the State Fairgrounds (e.g., Joe Dumars Field House).

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<sup>19</sup> Ferndale City Directory. R.L. Polk and Company, Detroit. 1955.

- Planned revitalization of Ferndale’s business core and neighborhoods.
- Proposed mixed-use redevelopment of the Hazel Park Race Course.
- Residential and commercial revitalization throughout Highland Park typified by the following projects:
  - ✓ Town Center.
  - ✓ Highland Heights Historic District.
  - ✓ Medbury-Grovelawn Historic District.
  - ✓ Neighborhood commercial development along Hamilton Avenue.
  - ✓ Infill townhome development south of the Davison Freeway.
  - ✓ Industrial revitalization at the Farmer Model-T area.
  - ✓ Industrial development along Oakland Boulevard.

Major transportation developments in the area include the proposed widening of I-75 throughout Oakland County; the revitalization of the Woodward Avenue/Eight Mile Road intersection; and, high-type transit along corridors like Eight Mile, Woodward Avenue, and Gratiot Avenue.

Future development possibilities for the area around the CN/Moterm terminal are best portrayed in the master plans of each of the four host cities. For Detroit’s North Sector, the Master Plan of Policies indicates

*“The elements most greatly affecting the future of the North Sector are its industrial facilities, its neighborhood systems, and – directly tied to neighborhoods – its housing stock. The Sector’s greatest potential lies in the maximization of these three resources.*

*“Industrial areas of the North Sector appear to have excellent potential for continued employment opportunities, for expansion of select areas, and for continued support of the economic base of the City, given the Sector’s attributes of location.*

*“Central to the future of the North Sector is its neighborhood systems. The North Sector has many healthy neighborhoods on which to expand; it has just as many neighborhoods with the potential to become just as healthy as any of the best neighborhoods of the Detroit metropolitan area.*

*“The North Sector is a major trucking center, second in importance only to the Southwest Sector (among Detroit’s 11 planning sectors). Rail transportation, however, is of less importance to the North Sector, for rail lines mainly serve through traffic. The Sector is not heavily industrialized; there are very few active rail sidings here, and no rail classification yards (areas used for switching and freight trains linking up) or terminals remaining active.*

*“The construction of the planned Light Rail Transit (LRT) system along Woodward will have an important impact on the North Sector. The regional transportation plan calls for the development of a LRT system in the Woodward Corridor from downtown Detroit to the northern suburbs.”*

The Ferndale Master Plan cites the following for the area “Southeast of Nine Mile Road and Woodward Avenue:”

*“The Grand Trunk Railroad property and the surrounding industrial uses are the primary users of land in the Southeast Planning Area.*

- The industrial land use pattern is proposed for minor expansion in three areas. These include two areas along Bennett between Fair and Westend and Troy south of Nine Mile.*
- Along sections of Hilton south of Hazelhurst, a mixture of multiple-family use and office use is proposed. This office and residential redevelopment area would receive the same zoning as is proposed for the Livernois corridor (mixed use residential and office).*
- Multiple-family land uses are proposed for: area south of Nine Mile and east of Woodward Avenue; on the west side of Hilton, south of Hazelhurst, also west of Hilton, east of Woodward between Webster and Chesterfield.*
- Business redevelopment and expansion is proposed east of Woodward Avenue and north of Eight Mile Road. The consolidation of sites and enlargement of existing uses is discouraged. These increases in land use intensity must meet the same objectives listed for the business redevelopment along Eight Mile west of Woodward and the PUD zoning should be considered.*
- Another business area in need of improvement is at Hilton and Nine Mile Road. In addition to business uses, the possibility of locating a station for rail commuters should be explored with other agencies in the Metro area.*
- For the area east of Wanda between Channing and Chesterfield, uses should be encouraged that function as buffers between the residential uses to the east and the industrial uses to the west. For the industrial sites along Wanda (south of Nine Mile Road) parking, storage and high intensity use areas should be buffered from the residential uses. The buffered areas can be developed by using landscaping, walls, earth berms or fences. Within the Wanda Street rights-of-way more street trees can be planted to help buffer the residential uses from the industrial uses.”*

The Hazel Park Master Plan indicates:

*“Eight Mile Road Corridor. A major component of the plan for the Eight Mile Road Corridor is to increase the area and depth of parcels to improve their industrial or commercial potential. This will allow for parking areas and a landscape buffer to protect and strengthen residential areas north of the frontage. Closing of Muir Street could be considered in conjunction with significant development proposals. Most of the frontage is planned for corridor business or industrial use which will increase the potential reuse of vacant properties beyond traditional retail or highway commercial. Viable light industrial uses can co-exist with commercial and a more cohesive corridor can emerge with sufficient parcel depth, attractive landscaping, quality site design*

*standards, signage and lighting. The City should remain involved with the Eight Mile Boulevard Association and seek opportunities to coordinate redevelopment plans with regional planning and design proposals for the Eight Mile Road Corridor.”*

The Highland Park Master Plan indicates:

*“Highland Park seeks to re-establish the city as a livable community. Desiring to establish land use policies which will encourage and direct new investment in the city, this Master Plan provides a guide for land use to meet the city’s goals. To make Highland Park a desirable and livable community, the city will focus on the following:*

- *Improving the city’s neighborhoods*
- *Rebuilding the economic base*
- *Creating a better image for the community, which announces that Highland Park is an attractive small town oasis in the urbanized metropolitan area*
- *Revitalizing Woodward Avenue as the city’s main street.”*

“A strong economic base is critical to the future of Highland Park. While the city has seen new investment in the community, it is important to direct additional investment to the rebuilding of the city’s economic base. The city is an attractive business location, accessible to the region and, with the recommended infrastructure improvements, provides opportunities for new development.

“The Master Plan provides for a diversity of business types including larger parcels of ten acres and more for properties in the Oakland corridor, a new business park at the former Ford Model T plant, upgrading of existing business districts (Victor Street and Midland Park areas), and the establishment of a communications corridor in cooperation with Detroit’s Focus Hope area.

“Future office and community retail development are encouraged in mixed-use areas in the City Center located on Woodward between the Conrail viaduct and Davison Freeway. These mixed-use areas also could contain housing on upper floors and rear portions of the parcels. In addition, neighborhood amenity retail is encouraged in smaller centers proximate to the residential areas on Hamilton and Woodward.

“It is estimated that implementation of these land use policies over the next decade could create approximately \$18 million in annual taxes to the city and a total of nearly 10,000 jobs. With a future residential population of approximately 24,000, the city’s tax base could be more supportive of schools and community services.”

Based on the past, present and foreseeable future trends, the following cumulative effects can be anticipated with development of all Action Alternatives in the terminal areas associated with the Livernois-Junction Yard/CP-Expressway terminal, CP/Oak terminal and CN/Moterm terminal (refer to Table 4-15). For the No Action condition, these impacts are a continuation of past trends.

- **Mobility:** While there will be an increase in traffic due to both the growth in intermodal activity and the stimulated additional development, there are no negative congestion



effects expected either on major arteries or local neighborhood streets unless the proposed Jobs Tunnel project were to be implemented where the CP/Expressway terminal is located. That project proposes to convert two existing rail tunnels to trucks and build a third, more modern terminal for rail. The proposal is in the discussion phase. Public information on details is limited.

It should be noted that under Alternatives 3 and 4, where intermodal operations of either three or four railroads are consolidated at the Livernois-Junction Yard, the terminals at CP/Oak and CN/Moterm will continue to be used by the railroads for shipping freight by other means than intermodal. That activity will be associated with a smaller volume of truck traffic than if the terminals were to continue to serve intermodal.

- **Economic Impacts:** It is expected that local businesses will develop or expand in several sectors related to the growth in intermodal transportation. Likewise, such change will be associated with an increase in local jobs with greater income levels and buying power. This should then help grow the tax base. These expected conditions apply to each of the three terminal areas. But, they will be greater under Alternatives 3 and 4 (i.e., some form of intermodal consolidation) than Alternative 2 (no consolidation) and Alternative 1 (No Action).
- **Land Use Changes:** Land use changes are expected to be accelerated with growth in intermodal transportation and the associated and improved economic stimulus. Such growth could be associated with the mixing of land use types that are unwanted, i.e., industrial/commercial with residential. This can be avoided by local units of government applying already-existing land use/zoning principles, like those in the City of Detroit's Master Plan of Policies and the master plans of Dearborn, Ferndale, Hazel Park and Highland Park.
- **Air Quality:** Increased development will likely increase local pollution. But, results of the analysis of direct/indirect air quality impacts indicates that such increases will not cause standards to be violated if the development is properly located. This will happen if government actions are consistent with the planning processes cited earlier and in the appendices to this report.
- **Cultural Resources:** Historic districts/properties may experience adverse effects from new private sector development associated with the growth in intermodal activity that could occur adjacent to their boundaries if already-existing local government controls are not applied.
- **Community Cohesion:** Development stimulated by intermodal activity/investment may create opportunities for use of abandoned residential parcels (the City of Detroit owns thousands of such parcels as a result of tax delinquencies). This development could lead to unwanted mixing of land uses if controls in the master plans of various cities are not implemented. For example, tracts large enough to hold logistics businesses to support intermodal activity could locate along or near the Livernois-Junction Yard, such as the Ward Bakery at Toledo Avenue and West Grand Boulevard. This parcel is tucked in a residential area and should it be allowed to develop, the increased truck traffic will have a negative effect on the community.
- **Noise:** Traffic volumes and ambient noise levels will increase as economic conditions improve. Negative effects are not expected and can be avoided with care

by the developer and local government agencies in locating this increased development away from sensitive uses.

- **Water Quality:** Increased development could lead to more impervious surface runoff and pollutant load. This could be offset by reclaiming properties now affected by contaminated materials for increased economic activity. Thousands of such properties exist, are abandoned, and have not been remediated. Use of some of the properties by DIFT-related activities will cause remediation which will improve the quality of the runoff into surface and subsurface drainage infrastructure, compared to the No Action condition.

These cumulative effects are those expected in each of the three areas around the intermodal terminals. Broader regional effects are virtually impossible to quantify or locate geographically. But, the possibility exists that, with or without the DIFT, the four Class I railroads will make other improvements on their own (like at interlockers discussed in Section 3.4.1) in the Southeast Michigan region. To the extent any of these require environmental clearances, they will be pursued.

It is also important to recognize what effects may occur in one key regional area: wealth distribution/redistribution, which occurs with shifts in population, employment and tax base. Shifts in tax base occur as land is developed for new housing and businesses. Shifts also occur within existing built-up areas as residents and businesses move. Both processes usually result in less taxable property in older communities that have little undeveloped land and room to grow. That is typically the case in southern Oakland County communities, such as Hazel Park and Ferndale and such Wayne County communities as Dearborn.

Market-driven actions and supporting public policy decisions underlie the dynamics of the wealth distribution pattern in the Detroit-centered region. All of these decisions operate separately from the Action Alternatives. These dynamics include, as cited by SEMCOG in its report entitled *Land Use Changes in Southeast Michigan, Causes and Consequences*, "...residential segregation by race and income, federal tax subsidies for home mortgage interest and property taxes, school funding and quality, crime and public safety, societal ideals of lifestyle and urban design, constitutional protections of private property rights, infrastructure financing policies, and extent of personal vehicle ownership and use."

The DIFT has the ability to respond to this pattern in a positive way. By building on the transportation and industrial strength of the areas in which intermodal terminals function; by making improvements to push terminal traffic out of residential areas; by creating barrier walls that provide terminal security and reduce noise; by paving surfaces that are unpaved; by creating jobs which can be directed to the local areas around the terminals; and by preparing/training community residents to be able to take those jobs, the DIFT can have greater positive than negative impacts – direct, indirect and cumulative.

The DIFT can also be measured as a positive proposal by using a number of principles of Governor Granholm's Land Use Leadership Council, which promote use of existing infrastructure in communities to create public-private investments to address economic and other quality-of-life issues. These principles are:

- Supporting efforts to make Michigan cities more livable by expediting the reuse of abandoned properties, controlling blight, encouraging private investment, encouraging mixed-use development, improving transportation options, supporting a full range of

housing options, and attracting and retaining residents who can contribute to the viability of our urban core areas.

- Making better use of existing public infrastructure by encouraging public and private investment in already developed areas.
- Creating incentives to encourage interagency and intergovernmental cooperation in addressing land use issues and public investments of more than local concern.
- Encouraging private investment in already developed areas by removing governmental barriers and creating incentives.
- Identifying “commerce centers” where infrastructure is already serving relatively dense populations to guide the future investment of state resources to support private investment and development.

#### **4.18 Emergency Response Controls**

Each of the Class I railroads operating intermodal freight terminals in Southeast Michigan has Emergency Response Plans in place to address transportation incidents involving U.S. DOT-regulated materials (hazardous materials, hazardous substances and hazardous wastes) and oils. These plans prescribe procedures to respond to spill incidents from derailments, leaks, fuel spills, etc.

Regulations governing Emergency Response Plans include OSHA’s (the U.S. Occupational Safety and Health Administration) Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements, U.S. DOT’s 49 CFR 130, the Oil Pollution Prevention and Response regulations (40 CFR Part 112) and other programs of the Clean Water Act. Components of Emergency Response Plans include pre-emergency planning coordination with local agencies; assignment of personnel, their roles and responsibilities; hazard recognition; specialized personnel training; site security and control; emergency notification procedures; spill response equipment; and, emergency medical treatment provisions.

Spill prevention and response at fixed facilities (including railroad terminals) that store quantities of oil and hazardous materials above threshold amounts are addressed with Spill Prevention Control and Countermeasures Plans (SPCC) and Stormwater Pollution Prevention Plans that have been prepared by the railroads. These plans focus on prevention of releases to streams and other water bodies.

These procedures are part of the No Action Alternative and all Action Alternatives, as well.

#### **4.19 Terminal Security**

For all Action Alternatives, barrier walls, fencing, other physical barriers, and electronic systems (e.g., sensors, alarms) are part of each Action Alternative to protect areas within an intermodal terminal from unauthorized access. Access control points for personnel and vehicles to move through the terminal boundary lines (such as gates, doors, guard stations, and electronically controlled or monitored portals) are also included in each Action Alternative’s design. Measures that will enhance these boundaries/access points include clear zones on both sides of fences, security lighting, locks, CCTV systems and signage.

While the number of access points will be kept to a minimum, adequate vehicle access points are planned for maintenance and emergency operations. To prevent obstructions within the gate path and protect gate equipment, the design concept includes proper drainage grading; planned gaps in curbs; installation of concrete channels or mow strips below the gate path; and, use of bollards.

Security effectiveness of the perimeter barrier will be enhanced by the provision of clear areas on both sides of the wall to facilitate surveillance and maintenance of the wall and deny cover to vandals and trespassers. Suggested clear distances range from 10 to 30 feet, within which there should be no climbable objects, trees, or utility poles abutting the wall nor areas for stackable crates, pallets, storage containers, or other materials. Likewise, the parking of vehicles along the wall will also be prevented. In addition, landscaping within the clear area will be designed to reduce potential hidden locations for persons, objects, fence damage, and vandalism.

Lighting of the area on both sides of gates, and selected areas of walls, will be provided. Similarly, sufficient lighting will be provided for areas in which a CCTV (closed circuit television) camera is intended to monitor activity. Reduced lighting, or sensor-activated lighting, may be considered in areas which have minimal traffic throughput in the off-peak hours. CCTV monitoring will be considered, particularly for low-traffic gates and maintenance access points that are removed from principal activity areas.

Signage will be posted on certain security boundaries and at selected access points. Signs will be located such that when standing at one sign, the observer will be able to see the next sign in both directions. The use of signage, even in some non-required locations, will provide a deterrent by warning of the boundary as well as for notification of the consequences for violation. Many locations with access control or CCTV equipment may warrant signage for either directional or legal purposes (e.g., "Alarm Will Sound If Opened," "Authorized Personnel Only," "Notice: All Activities In This Area Are Being Recorded via CCTV," etc.).

VACIS (Vehicle and Cargo Inspection Station) is an X-ray-type device that is able to see into containers/trailers to detect any unusual cargo. VACIS systems are now being installed by each of Canadian Pacific and Canadian National Railroads to screen trains on the Canadian side of the international border before they enter the U.S. Consideration by all DIFT participants (public and private) will be given to installing a VACIS system at the Livernois-Junction Yard under Alternatives 2, 3 or 4, if an Action Alternative is chosen for implementation. The allocation of cost will be determined at that time.

## **4.20 Terminal Lighting**

The CP/Expressway and the CP/Oak terminals are surrounded by railroad tracks, major roadways, industrial properties, and commercial properties. Because of this, no sensitive areas such as residential neighborhoods will be affected by lighting at those terminals. Directional lighting will be used at the CN/Moterm terminal, in areas near the residential neighborhood east of the proposed expansion area in Alternatives 2 and 4, and at the Livernois-Junction Yard near residential areas such as along Cabot, Lawndale, and Trenton Avenues, and the area south of Dix Avenue at the central/east ends of the terminal. Nevertheless, it is noted that lighting will increase at each terminal under Alternatives 2, 3 and 4.

## **4.21 Soils**

The former clay pits near the Livernois-Junction Yard will need to be tested to determine what type of soil/materials were used to infill the area. The potential for the existence of contaminated materials causes this need, as defined in Section 4.16.

## **4.22 Construction Permits**

Michigan Department of Environmental Quality permits will be required for Action Alternatives during the design phase for use of wetlands and stormwater discharges. The construction phasing will dictate the number of permits required. See Section 5.4 for a list of required permits.

## **4.23 Energy**

Energy will be used to construct an Action Alternative. Fuel savings should be realized in the long term due to improved efficiencies in the movement of freight on rail to, from, and within intermodal yards. There will also be improved efficiencies in the movement of freight on trucks to and from intermodal yards adding to fuel savings, consistent with the reduction of vehicle miles of travel in shifting freight from truck to rail (each intermodal rail car is the equivalent of three trucks).

## **4.24 Implementation Cost**

Estimated construction costs (in 2004 dollars) are \$170 million for Alternative 2, \$458 million for Alternative 3, and \$436 million for Alternative 4. Right-of-way/property-related costs are estimated to be \$98 million for Alternative 2, \$125 million for Alternative 3, and \$115 million for Alternative 4. Total estimated project implementation costs are \$267 million for Alternative 2, \$583 million for Alternative 3, and \$551 million for Alternative 4. These costs will be borne by both government and the railroads.

## **4.25 The Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity**

This project is a result of local and regional, as well as statewide comprehensive planning. Present and future freight needs were considered and are reflected in the Action Alternatives that address the proposed project's purpose and need. It is concluded that the local short-term impacts and use of resources by the Action Alternatives are consistent with the maintenance and enhancement of long-term productivity for both the local (Southeast Michigan) area and the State of Michigan.

## **4.26 Irreversible and Irretrievable Commitments of Resources Which Would be Involved in the Proposed Action**

Implementation of each Action Alternative involves a commitment of a range of natural, physical, human, and fiscal resources. Land used for expansion/construction of a proposed terminal is an irreversible commitment of land.



Considerable amounts of fossil fuels, labor, and construction materials such as cement, aggregate, and bituminous material will be expended for this project. Additionally, large amounts of labor and natural resources will be used in the fabrication and preparation of construction materials. However, these materials are not in short supply, and their use will not have an adverse effect upon continued availability of these resources.

Construction of each Action Alternative will require a substantial expenditure of state, federal, local and private funds. The commitment of these resources will result in an improved freight transportation system, providing improved efficiency, safety, and savings in time. These are expected to outweigh the commitment of these resources.

